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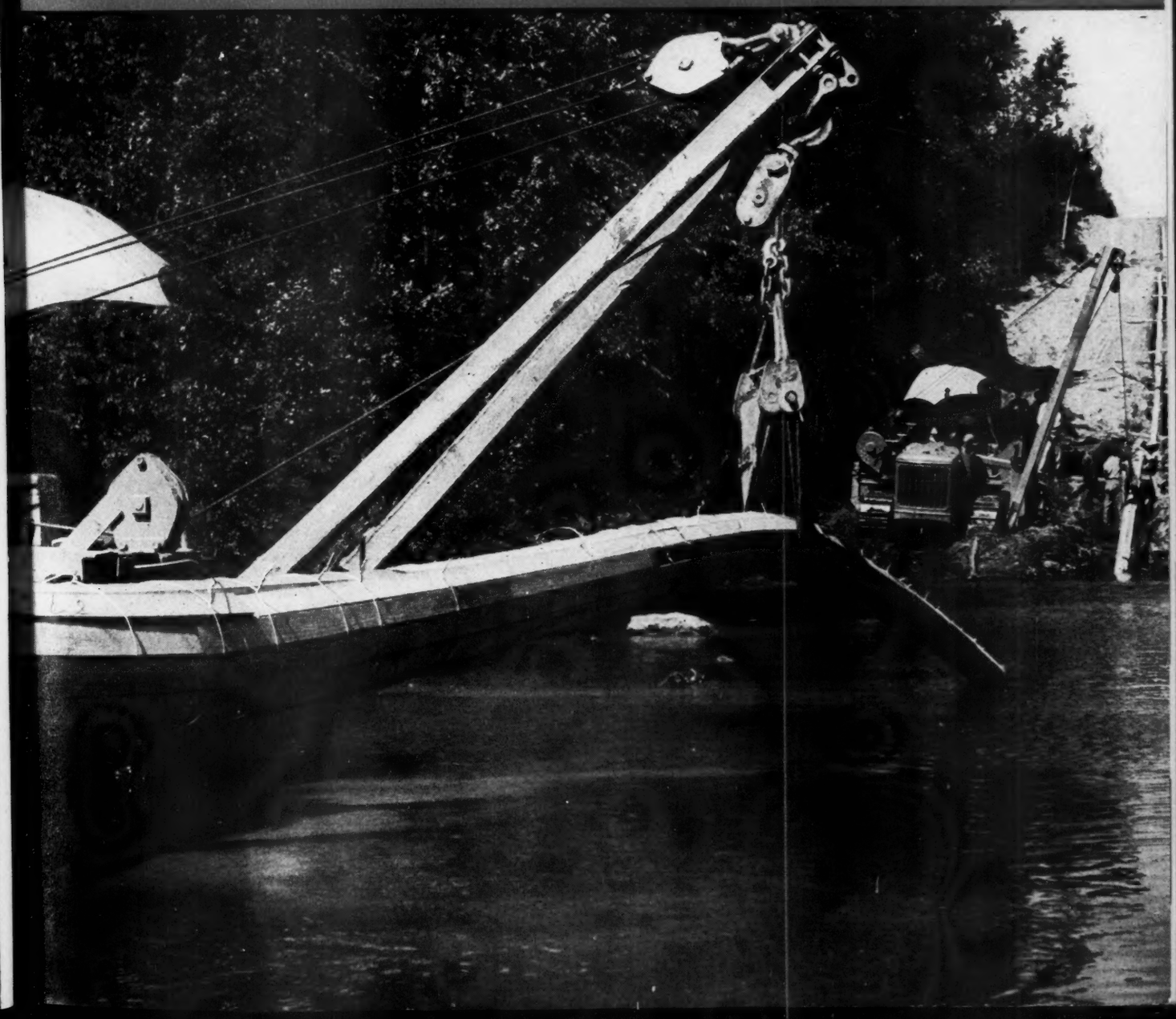
fueloil & oil heat



Photos courtesy Mid-Hudson Oil Co., Poughkeepsie, N. Y. showing loading racks equipped with Brodie Remote Control System.

Battery of seven Brodie Remote Counters with Brodimatic Printers located in dispatcher's office.

—with BRODIE Remote Control Meters equipped with BRODIMATIC PRINTING COUNTERS

By cutting loading time in half—it is possible for each tank truck to deliver as much as one extra load per day. This speed-up in loading operations is greatly facilitated by the installation of Brodie Remote Control Meter System. With each rack outlet directly connected to a Brodimatic ticket printing counter, located in a central office, a single dispatcher can control the loading and check-out of eight or more trucks at any one time. Also, with a continuously accurate record of transfers, there can be no unaccounted-for outgoing gallonage. Moreover, there's less chance for errors on meter printed tickets. Investigate this time, error and cost saving system today. Ask for Bulletin No. 615.

BRODIE METERS

PETROLEUM METERING EXCLUSIVELY

SINCE 1927

RALPH N. BRODIE CO., INC., 61ST & LOWELL, OAKLAND 8, CALIFORNIA
Division Offices: CHRYSLER BLDG., NEW YORK CITY • 59 E. VAN BUREN, CHICAGO 5 • 302 SOUTH PEARL ST., DALLAS 1, TEXAS • 221–9TH AVE. NORTH, SEATTLE 9, WASH. • 2101 S. SAN PEDRO, LOS ANGELES 11, CALIFORNIA

REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES

Names in the News

W. A. *Matheson* resigned his position as executive vice president, Eureka Williams Corp., Bloomington, Ill., at a board meeting of the corporation held February 18 in New York City. The resignation was accepted. Mr. Matheson is continuing as a director of the corporation.

W. A. *Power, Jr.*, has been designated sales representative for the Washington, D. C. area, for Thatcher Furnace Co., Garwood, N. J. Before coming to Thatcher, Mr. Power was employed as a heating sales agent for the U. S. Maritime Commission and War Assets Administration. His background includes extensive sales engineering and field experience since 1927 with companies in Missouri and Kansas, and during the war as associate mechanical engineer, Federal Public Housing Authority.

J. W. *LeRoy* has been named assistant to Carroll M. Baumgardner, vice president for sales, National Radiator Co., Johnstown, Pa. Mr. LeRoy has been identified closely with the heating industry in various capacities and for some years has been with Berger Mfg. Div., Republic Steel Corp.

H. M. *Soyster* has joined Toridheet Div., Cleveland Steel Products Corp., Cleveland 2, Ohio, as sales representative in the territory embracing southwestern Michigan, northern Indiana and northern Illinois. He has been connected with the oilheating industry since the early 1920's and enjoys a wide acquaintance

fueloil & oil heat

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(FRONT COVER: *Easing a section of the South Portland-Bangor, Me. Socony-Vacuum pipeline to the bottom of a stream. See story and pictures on page 68.*)

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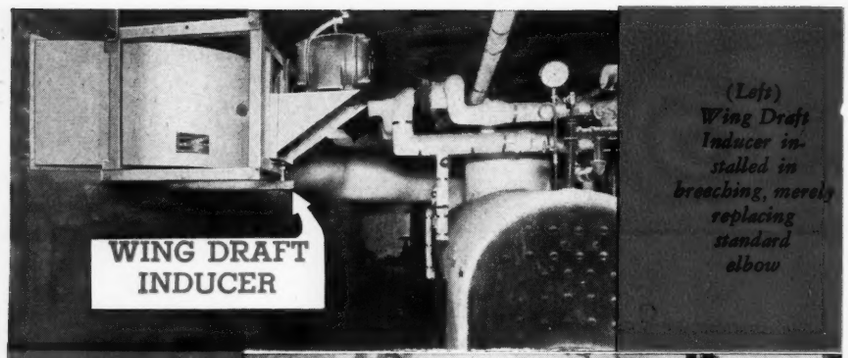
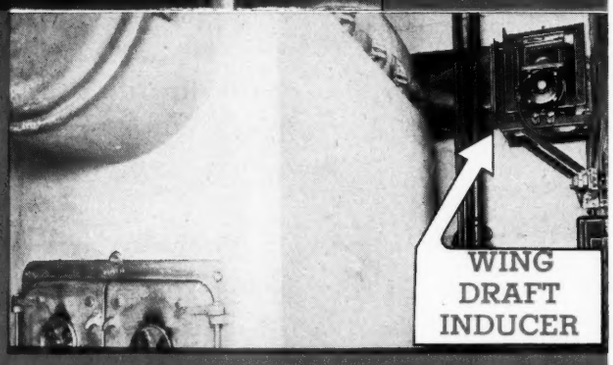
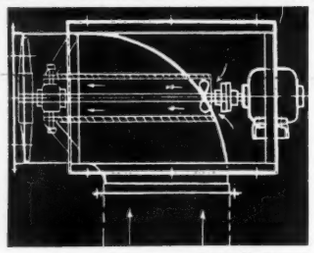


(Left) Wing Draft Inducer installed in breeching, merely replacing standard elbow



(Right) Wing Draft Inducer installed in elbow of breeching operating automatically with oil burner

How to Insure Positive Draft



Write for a copy of Bulletin on Wing Draft Inducers

The Wing Draft Inducer provides a means for furnishing positive, uniform, adequate draft for low pressure heating plants without the need for tall, unsightly, expensive stacks.

It permits operating at high efficiencies without regard to weather conditions.

Thorough and efficient combustion with high CO_2 content is assured. Smoke, gas and explosion hazards are reduced or eliminated.

L. J. Wing Mfg. Co. 154 West 14th Street, Dept. FO, New York 11, N. Y.

Factories: Newark, N. J. and Montreal, Canada

Wing

DRAFT INDUCERS

among dealers in his area. He is a veteran of the early Silent Automatic organization and prior to joining Toridheet had been with Timken Silent Automatic as a sales representative.

Ben L. Boalt has resigned his position as assistant to the president, Perfex Corp., Milwaukee 7, Wis. To date Mr. Boalt has not made any announcement as to his plans for the future.

G. Curt Eggleston, regional field service engineer, Delco Appliance Div., General Motors Corp., Rochester 1, N. Y., since 1939, has been named southwestern regional manager for Delco-Heat and water systems sales. Mr. Eggleston entered the field of application and research engineering in 1935 and in 1947 became application engineer, Delco-Frigidaire Div.

L. Bushfield, who has advanced to the position of sales manager, range and heater division, Perfection Stove Co., Cleveland 4, Ohio, has been succeeded by *C. C. West,* veteran salesman, as manager of the Atlanta district. Mr. Bushfield joined the company as a clerk in 1920 and went to the newly Atlanta established branch in 1925 as chief clerk. He became its manager in 1944. Mr. West joined Perfection as a salesman, also in 1920, and just prior to his new appointment, had been representing the company in South Carolina.

C. E. Scott is manager, unit heater and convector division, new post established by United States Radiator Corp., Detroit 31, Mich. The appointment reflects the growing importance of merchandising and distribution in the company's expansion program, according to Wesley J. Peoples, president and chairman. Mr. Scott formerly was with Rittling Corp., Fedders Mfg. Corp., Warren Webster & Co., Camden, N. J. and Carrier Corp.

News for dealers

about Ohio's new service and distribution policy

AN estimated 1,000,000 Ohio oil burner motors are now in operation. This large number of installations—plus a growing dealer preference for Ohio Motors—has suggested a change in our service and distribution policy.

Objective of the new policy is *faster dealer service.* Here's how it affects your business.

All Ohio Motors will now be serviced and repaired by authorized Ohio service stations conveniently located throughout the country. These same service stations, listed below, are also authorized distributors for Ohio replacement parts and motors.

We have also appointed certain distributors who will stock Ohio replacement parts and motors exclusively without performing the service center function.

We suggest that you make a note of the Ohio service station and distributor nearest you. Additional appointments now being made will be announced soon.

OHIO SERVICE STATIONS
(also authorized distributors)

Capson Co., Inc.
106 Rogers Ave.
Brooklyn 16, N. Y.

Electric Equipment Co.
2473 Sherman Ave.
Washington 1, D. C.

Empire Electrical Co.
6 Portland Street
Cambridge, Mass.

Fred W. Kiemle Co.
33-37 N. Superior St.
Toledo 4, Ohio

R. E. Michel Co.
1011-17 Greenmount Ave.
Baltimore 2, Md.

North End Electric Co.
16638 Log Cabin
Detroit 3, Michigan

The Ohio Electric Mfg. Co.
Brook Street
West Hartford (Elmwood), Conn.

R. I. Fuel Pump Service Co.
847 No. Main St.
Providence 4, R. I.

S & M Electric Motor Repair
Trenton, N. J.

Harmon Szitas
231 South Duke St.
York, Penna.

OHIO DISTRIBUTORS

Robert Barclay, Inc.
122 North Peoria St.
Chicago 7, Ill.

Buffalo Pump Service Co.
440 South Bay Road
North Syracuse, N. Y.

Certified Fuel Unit Service
600 Spring Street
Elizabeth, N. J.

Certified Fuel Unit Service
3416-18 W. Allegheny Ave.
Philadelphia, Pa.

Crescent Parts & Equipment Co.
825 S. Boyle Ave.
St. Louis 10, Mo.

Electric Motors and Parts Corp.
392 Clinton Ave.
Newark 8, N. J.

Frontier Oil Refining Corp.
800 Ellicott Square
Buffalo 3, N. Y.

Hill Electric Co., Inc.
580 Mateo St.
Los Angeles 13, Calif.

E. L. Kimball Co.
20 Lynde St.
Malden 48, Mass.

Meier Transmission Supply Co.
4415 Perkins Ave.
Cleveland 3, Ohio

Oil Heating Supply Co.
8 Cedar St.
Framingham, Mass.

Pelton Distributing Co.
7325 Tireman Ave.
Detroit 4, Mich.

W. S. Plummer
109 Lincoln Ave.
Quincy 70, Mass.

Rochester Oil Burning System
198 N. Clinton St.
Rochester 4, N. Y.

Swing Machinery & Equipment Co.
1523 Transit Tower
San Antonio 5, Texas

THE OHIO ELECTRIC MFG. CO. • 5900 MAURICE AVENUE • CLEVELAND 4, OHIO

Ohio MOTORS

A-2068

fueloil & oil heat

Editorial Leaks

As members of the small business group, we have been interested in recent weeks to see the increasing volume of printed and mimeographed material being released to convince us we need to support this or that measure to "protect" us from business monsters. It is good to know that our welfare is being so zealously guarded by so many good men. We had been busy and never otherwise would have noticed.

This magazine and its allied services are produced by a dozen people, four of which own its stock. It is not affiliated with or controlled by any other group or corporation. From its annual billing it definitely is small business. In the publishing field there are firms many times our size, and a few even smaller, with magazines that compete for part or all of our business. Sometimes the going is rough, and there always is the temptation to blow the whistle and shout for "protection" against the overwhelming power of our competitors.

On more sober consideration we never can become thoroughly convinced that we want protection. If our hopes and dreams come true we may become big, and any regulation that prevents us from growing, or that would hamper us when we got our growth, definitely is not to our advantage. It is hard to conceive of a business climate that would be good for us and bad for our competitors, large or small.

Size is not evil of itself. If you are to build a steel mill, make automobiles, set up an oil refinery, or take a contract to build a battleship, you are big business from the start. With good management you can get bigger, and probably produce at lower cost and sell profitably for less than your smaller competitors. If that system is wrong the country has been living in sin since Colonial days.

May God protect us from ourselves, and from the social-minded do-gooders who would make it attractive for us and our industry to remain a peanut stand operation for the rest of our business life.

◈

There seems to be no limit to how shoddy equipment can be made or how poorly it can be operated. Word comes of a fire in New Jersey caused by "flame" coming into the livingroom through the duct work.

Inquiry brings forth a fairly typical story of the builder who bought as cheaply and as small as possible when he got the heating plant. The light, undersize warm air furnace was being forced beyond its capacity to carry the load. All went well, except for the stack temperature, until the larger flame destroyed the metal combustion chamber, and burned through the furnace shell. Products of combustion from the oversize fire were blown into the living space at such a temperature that draperies near the supply opening were ignited.

It seems doubtful if builders ever will take much interest in the quality and efficiency of their heating plants until prospective customers are taught to demand adequate heating for their new homes.

It has been pointed out here before that every home owner pays for a good heating plant, whether he gets it or not. If he buys it originally, he escapes paying for it forevermore in his fuel bill. Since fuel is the largest single house expense, with the possible exception of taxes, every percentage point of saving on the fuel bill is important.

The heating industry generally, regardless of type or fuel, has done a poor job of selling economy. People still buy "a furnace" with the house, and assume that it is properly sized, well installed, and operates at the highest possible efficiency. Too many find their mistake after the down payment has been made and the mortgage given.

◈

Only slightly less goofy than the age-old questions, How High Is Up? or How Long Is a Piece of String? has been the recurring question of How Hot Is Hot Water? Now come the researchers with an answer—an answer that depends on another question, What Do You Want It For? All this is not too helpful to the oilheating industry, since few people will be persuaded to install separate water heaters for each individual use.

Tests at the Virginia Polytechnic Institute reveal that for bathing and personal cleanliness the hottest water required is 110 degrees. For general cleaning water seldom need be hotter than 90 degrees. It is only for laundering and dishwashing that higher temperatures are needed. For the dishes it will depend on whether they are to be washed by hand or in a machine.

Laundry water requires at least 140 degrees. Water of 160 degrees is better, but not enough better to compensate for the higher cost of maintaining the greater temperature. Water above 170 degrees is not recommended except where white clothes are boiled to sterilize them.

So, it seems that everybody has been right in the controversy. It was only that they were talking about water for different purposes.

◈

A year ago oil company officials were advising users of heavy fueloil to hedge their future requirements by lining up new supply sources, converting boilers and reducing demand. It was said that future yields of heavy fuels would be drastically cut, Navy and marine demand was growing and the future of heavy oilburning equipment was uncertain. No responsible official in February 1948 would advise expansion of residual fueloil demand. All had figures to prove that no expansion was possible in the foreseeable future.

Equally responsible officials today are asking for the quick expansion of residual demand to mop up the flood of heavy fueloil that threatens to overflow available storage. Prices have dropped a third in eastern harbors since the first of the year and may go still lower. Residuals are an equal problem throughout the Middle West. The oil industry needs customers to take the heavy fuel off its hands.

The oilburner business can deliver customers in fair volume, but it would like some assurance those customers will not be urged to convert when the present surplus has been absorbed.

For the *SMART* SALES MANAGER..

GETTING AN INTERVIEW IN THE FACE OF COMPETITION
TALKING TO THE HOUSEWIFE
REVIVING INTEREST IN AN OLD PROSPECT
A "SPECIAL" OFFER FOR CLOSING

..WHISTLES AID BURNER SALES!

A salesman can't carry an oil burner around in his brief case but he *can* carry a VENTALARM® signal. And believe it or not, VENTALARM signal is actually closing sales for many oil burner dealers right now. VENTALARM signal is only a little thing but it lends itself to *selling showmanship* backed up by *real utility!*

Give your salesman a break—and yourself too! It has been proven time and time again that VENTALARM tank fill signal is one of the things an oil burner purchaser *wants.*

You'll be surprised at the story that can be built up around this little inexpensive whistle. Just write to us for the booklet shown in the lower right hand corner! We'll be glad to send one for each of your salesmen. Presents four sound basic sales approaches using VENTALARM signal.

VENTALARM signal takes no extra time to install when making a new burner installation. Simply screw it into the tank vent opening and run vent pipe from top of signal in usual manner. Use VENTALARM signal Model LA or L (according to your vent pipe size) on new installations. Costs only $2.05 and worth ten times that to your customer in added convenience.

Salesmen get more interviews, arouse more interest, tell a more powerful story

Prospects like the idea of a burner with safe, automatic fuel delivery

Prospects like the idea of "protected privacy"—no need for oil man to enter home

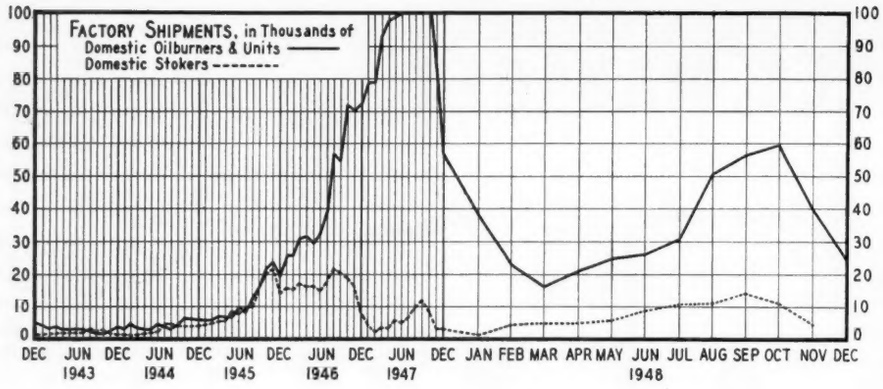
FREE: Write to us for this sales-making booklet

available at your supply house

Model LC with slip fit for old tanks.

SCULLY
VENTALARM
T. M. REG. U.S. PAT. OFF.
Whistling
TANK FILL SIGNAL

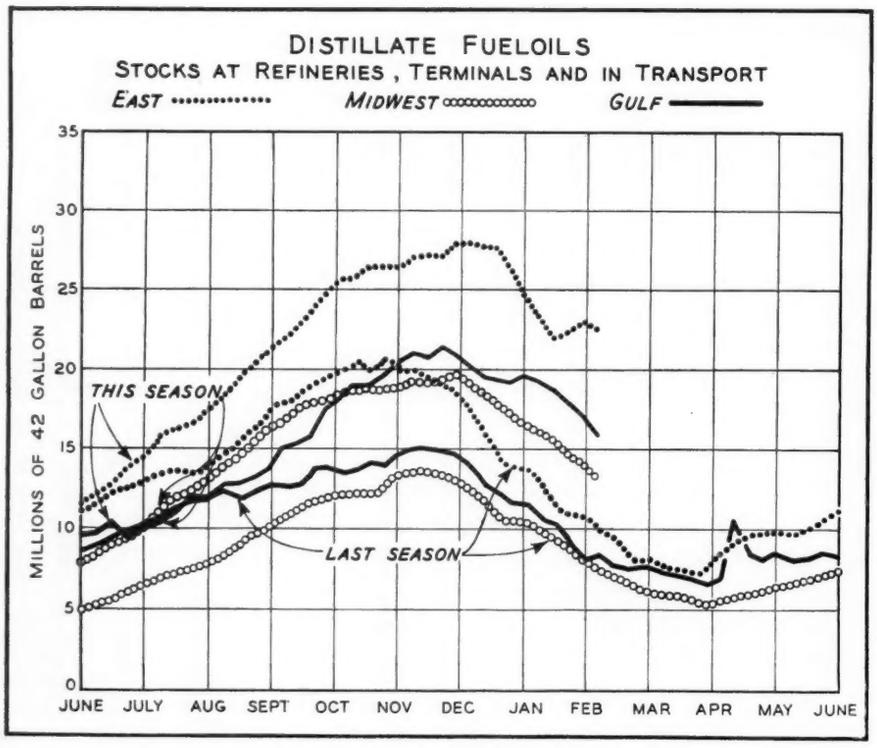
Canadian Licensee—EMPIRE BRASS Mfg. Co. Lt'd., London, Ont. SCULLY SIGNAL COMPANY 76 FIRST ST. CAMBRIDGE 41, MASS.


FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

Shipments of Oilburners and Units
(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	DECEMBER			TWELVE MONTHS		
	1948	*1947*	*Percent Change*	*1948*	*1947*	*Percent Change*
Conversion	18,807	37,614	— 50.0	287,829	943,185	— 69.5
Boiler units	2,081	2,306	— 9.8	38,187	57,906	— 34.1
Furnace units	5,531	17,470	— 68.3	86,843	194,121	— 55.3
All domestic	26,419	57,390	— 53.9	412,859	1,195,212	— 65.4
Commercial	2,348	3,813	— 38.4	28,433	53,993	— 47.3
Total	28,767	61,203	— 53.0	441,292	1,249,205	— 64.7



January Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
Jan. Aver.	$340	$688	$612
Dec. Aver.	346	720	646

Price Index: Conversion Burners: January 1949 is 100%

WHOLESALE				RETAIL			
Jan.	138.3	Six months ago	146.2	Jan.	145.2	Six months ago	152.0
Dec.	141.6	Year ago	144.6	Dec.	144.4	Year ago	151.1

Oilheating Trends

JANUARY started the new year fairly well with an estimated 30,158 installations of domestic oilburners and units. This was 21% below the number installed in January, 1948, but still it is a fairly good showing since most of this year's business had to be sold the hard way, while a year ago there remained a hangover from the strong seller's market of the previous fall.

The approximate division of January sales by applications was: New Homes 10,827; Replacements of old oilburners 7,389; Conversions from other fuels 11,933.

BURNER STOCKS: Stocks of domestic oilburners and units in dealer hands at the end of January were approximately 71,736. Factory stocks on December 31, the latest available data, were 45,951.

SELLING IMPRESSIONS: One-fifth of all of the families now being approached as oilburner prospects are hesitant about buying because they are not sure of future oil supplies. This is rather startling in view of the impression throughout the oilheating industry that oil is now so abundant as to cause an unstable price market. Apparently it takes quite a long time for a public impression so deep-rooted as this one to wear off. Assuming that we still have a job of removing this prejudice by the slow process of repeated public education, we can at least measure some progress because we had two previous checks on this point. On April 1, 1948, we found that 59% of the families approached doubted future oil supplies. Then last summer on August 1 another check showed that 39% of the general public believed that future oil supply was insecure.

It is interesting that the public's present feeling about future oil supply shows an important geographic variation. In New England only 7% of prospects called on feel that there is still a supply problem; in the Mid-Atlantic area 20% are concerned; in the Midwest 31% believe that it isn't safe to buy a burner for that reason, and in the Far West the percentage of skeptics on oil supply is 17. The reason for New England making such a good showing could probably be found in the widespread cooperative advertising done

last year by the Oil-Heat Institute of New England. The theme of that advertising was "plenty of oil for the future."

The present price of fueloil is also something of a deterrent to burner sales, with 46% of all prospects called on making objections on this point. Again there is considerable geographic variation. The New England and Mid-Atlantic states have the same figure, with 33% objecting to the price, while the Midwest jumped to 66% and the Far West 59%. The reason for some of these geographic differences is fairly plain. In the East oil is only slightly higher on a comparative basis than anthracite coal, while in the Midwest it is decidedly higher in cost than either the soft coal commonly used or natural gas. Fortunately, dealers and salesmen are able to point to some price cuts in recent weeks, and there is considerable probability that fueloil costs will drop a little more during this year.

The third sales resistance factor explored was the desire of some families to wait and see if they might get gas for heating. Countrywide this consideration was affecting 20% of the prospects reported on by the dealers. Again New England is most fortunate with a reported figure of only one percent of prospects thus influenced. The Mid-Atlantic percentage was 16, the Midwest 45, and the Far Western dealers found 2% of their prospective sales stymied by this preference for gas at some future date. Again this follows an understandable pattern. New England is saturated with oilheating preference, with the gas industry having got almost no foothold in home heating. Mid-Atlantic markets are giving gas a fair start on new home work, particularly in areas like Long Island, Philadelphia and Washington. The large gas impression on the Midwestern prospects results from its popularity due to low cost. The percentage for the Far West is influenced by the fact that most of the dealer reports come from Washington and Oregon where manufactured gas is high priced, and rarely considered for heating.

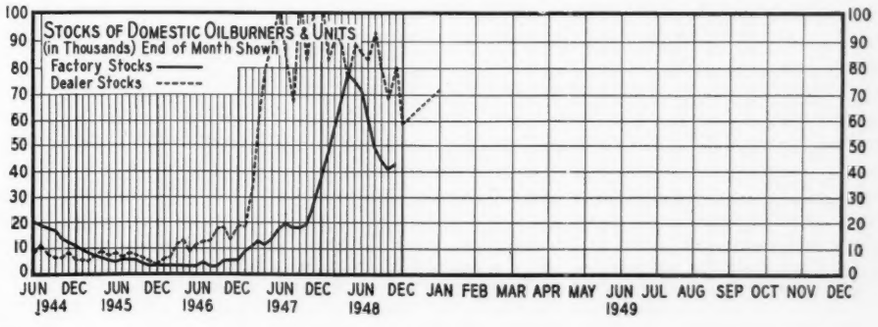
USING THE USERS: Nearly half (46%) of all of the reporting dealers have special arrangements for compen-

(Continued on page 118)

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
January		12 MONTHS			January		12 MONTHS	
1949	1948	1948	1947		1949	1948	1948	1947
128	260	2720	9600	Baltimore, Md.	20	296	5761	3197
..	..	..	..	Binghamton, N. Y.	12	0	141	106
..	..	..	..	Bloomfield, N. J.	1	..	..	..
..	592	..	..	Boston, Mass.	6	35	297	586
99	82	1051	1794	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	18	23	..	207
..	..	..	..	Des Moines, Ia.	10	35	905	970
..	..	..	..	Detroit, Mich.	182	459	6645	9403
53	76	447	844	Elizabeth, N. J.	4	0	21	93
14	11	..	450	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	7	5	270	272
..	..	..	..	Hackensack, N. J.	0	0	..	50
119	63	1373	1996	Hartford, Conn.	..	..	..	..
6	1	188	486	Irvington, N. J.	0	0	..	36
..	..	..	..	Lynn, Mass.	6	3	181	115
6	58	..	..	Meriden, Conn.	..	..	..	..
255	153	2136	3074	Milwaukee, Wisc.	61	70	1862	1347
84	139	1316	2757	Minneapolis, Minn.	33	30	1320	1545
12	11	229	361	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	..	0	..	..
19	7	266	519	Mt. Vernon, N. Y.	..	..	..	..
49	17	..	..	Newark, N. J.	..	..	..	..
72	62	845	614	New Bedford, Mass.	..	..	..	..
43	18	..	948	New Haven, Conn.	..	..	..	..
0	0	0	1	New Orleans, La.	..	..	..	..
11	12	139	429	New Rochelle, N. Y.	0	1	106	89
..	5295	62059	57588	New York City (total)	..	..	..	..
..	4856	55254	48393	Brooklyn-Queens	..	..	..	..
416	439	4471	9195	Manhattan, Bronx, Rchd	..	..	..	..
73	150	1331	960	Norfolk, Va.	..	37	585	791
0	0	11	14	Oakland, Calif.	..	..	..	..
59	182	1151	3060	Omaha, Neb.	7	12	..	871
8	5	163	280	Orange, N. J.	0	0	25	..
11	5	239	..	Passaic, N. J.	..	..	..	..
16	10	519	1143	Paterson, N. J.	1	10	107	62
345	343	6305	..	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	2	2	..	134
22	21	376	1049	Portland, Me.	2	0	97	158
404	361	..	9051	Portland, Ore.	128	121	..	1418
10	26	207	335	Poughkeepsie, N. Y.	..	..	..	..
50	48	..	1135	Providence, R. I.	5	0	..	146
..	..	..	..	Reading, Penna.	3	1	40	32
114	122	839	1614	Richmond, Va.	57	74	873	722
144	58	1620	3649	Rochester, N. Y.	..	..	..	..
29	16	330	368	Rockville Center, N. Y.	0	8	200	198
21	16	279	394	Salem, Mass.	3	0	120	44
107	122	1631	3240	St. Louis, Mo.	7	24	..	396
161	142	1632	3380	St. Paul, Minn.	4	36	..	1034
37	114	737	1011	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	81	261	..	2004
..	..	..	..	Springfield, Mass.	15	16	503	574
51	53	447	473	Stamford, Conn.	..	..	..	..
61	..	..	..	Syracuse, N. Y.	15	5	..	..
..	..	..	..	Trenton, N. J.	1	0	31	57
..	..	..	..	Utica, N. Y.	1	2	132	114
115	108	1791	3573	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	4	2	150	96
8	23	227	342	White Plains, N. Y.	19	13	..	96
51	78	..	1371	Wilmington, Del.	0	3	128	101
..	91	..	1767	Worcester, Mass.	..	..	..	..
17	9	322	733	Yonkers, N. Y.	..	..	..	..
3300	3371	86382	105,681	*Totals*	714	1523	20500	23121
—2.2		—18.3		*Percent Change*	—53.2		—11.4	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.



NATIONAL OIL HEAT EXPOSITION

MECHANICS' HALL • BOSTON • MAY 16 THRU 20, 1949

IN CONJUNCTION WITH 26TH ANNUAL CONVENTION OF OIL-HEAT INSTITUTE OF AMERICA

EXHIBITORS WHO HAVE ALREADY TAKEN SPACE*

Aldrich Company
American Artisan
American Mohawk Company
American Radiator & Std. Sanitary Corp.
American Stove Company
Applied Mechanics Company
Auto Heat Corporation
Automatic Devices Company

Bacharach Industrial Instrument Company
Bell & Gossett Company
Bethlehem Foundry & Machine Company
Boston Machine Works Company
Brown Electric Company

Century Engineering Corporation
Cole-Sewell Engineering Company
Commercial Filters Company
Crotty Manufacturing Company

Delavan Engineering Company
Delco Appliance Division
General Motors Corporation
Delco Products Division
General Motors Corporation
Dielectric Products Company, Inc.
Dole Valve Company
Domestic Engineering Company
Dongan Electric Manufacturing Company
Duo-Therm Division, Motor Wheel Corp.

Eckhart Manufacturing Company
Eddington Metal Specialty Company
Electrol Burner Mfg. Co., Incorporated

Fairbanks, Morse & Co.
Federal Boiler Co., Inc.
Field Control Division, H. D. Conkey & Co.
Fitzgibbons Boiler Company, Inc.
Fluid Heat Division
Anchor Post Products, Incorporated
Fuel Oil News
Fueloil & Oil Heat

General Electric Company
Air Conditioning Department
General Electric Company
Apparatus Department
General Filters, Inc.
General Fittings Company
General Oil Burner Corporation
General Oil Heating Corporation
Gerotor May Corporation
May Oil Burner Division
Guardian Products Corporation
Gulf Oil Corporation

Hajoca Corporation
Harbison-Walker Refractories Company
Harvey-Whipple, Incorporated
Herrick Company
The Heil Company
Herco Oil Burner Corporation

Independent Oil Burner Corporation

Jefferson Electric Company
S. T. Johnson Company

The Kent Company, Inc.
Kresno-Stamm Mfg. Co. (America) Inc.

McDonnell & Miller, Incorporated
Master Plumber & Heating Contractor
The Mercoid Corporation
Minneapolis-Honeywell Regulator Co.
Monarch Manufacturing Works, Inc.
Mt. Hawley Manufacturing Company
Morse-Smith-Morse, Incorporated
L. J. Mueller Furnace Company

Newark Transformer Company
Norge Heat Division
Borg-Warner Corporation

Oil Equipment Laboratories, Inc.
Oil Equipment Manufacturing Corp.

Penn Electric Switch Company
Perfex Corporation
Plumbing & Heating Journal
Preferred Utilities Manufacturing Corp.

Quaker Manufacturing Company
Quiet Automatic Burner Corp.
Quiet-Heet Manufacturing Corp.

Radiant Utilities Corporation
The Rajah Company
Reif-Rexoil, Inc.
Rochester Manufacturing Company, Inc.

Scully Signal Company
Shell Oil Company
Sid Harvey, Incorporated
Silent Glow Oil Burner Corp.
H. B. Smith Co., Inc.
S.O.S. Products Company, Inc.
Sparkler Manufacturing Co.
Standard Heater & Oil Equipment Co.
Stefco Steel Company
Heating Equipment Division
Sunstrand Engineering Co.
Sundstrand Hydraulic Division
Sundstrand Machine Tool Company
Super Electric Products Corporation

Taco Heaters, Incorporated
Thatcher Furnace Company
H. A. Thrush & Company
Timken Silent Automatic Division
The Timken-Detroit Axle Company
Toridheet Division
Cleveland Steel Products Corp.
The Torrington Manufacturing Co.
Tuthill Pump Company

U. S. Machine Corporation

The Viking Manufacturing Corp.

Waltham Oil Burner Company
Waterfilm Boilers, Incorporated
Watts Regulator Company
Weatherall Engineers, Incorporated
Webster Electric Company
White-Rodgers Electric Company
Williams Oil-O-Matic Division,
Eureka Williams Corporation

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fueloil & oil heat

What Price Free Enterprise?

Divorcement Is Interesting But Where Would Government Stop

by

Carl Jonswold*

THE INDEPENDENT OIL man is faced with a momentous decision in this question of divorcement of the Petroleum Industry. His first reaction is to cheer those who seek this solution to the independent oil man's problem, but is this a solution? Are those who are coming to our rescue motivated by the desire to do good? Are they inadvertently lending a helping hand to the enemies of our system of government? Will we be any better off? Has the record of governmental control of any economy such a rosy record that we are willing to be driven there? Could our sons become independent oil men under such a program? Will we be masters of our destinies under such a system? Where does such control begin and end? These are some of the questions which we must answer to our own satisfaction before we can take our stand on this issue.

Why has the issue been raised? Is it purely political and aimed at the destruction of our economic system or is there a fundamental issue? Have the internal workings of our industry created sufficient cause on which to base this action? I am afraid that almost to a man, the independent distributor would say yes to this last question. That answer may be given due to a lack of understanding; it may be due to a vote against bigness; it may be created by uninformed or "big shot" local representatives of supplying companies; it may be aimed at the fundamental policies of supplying companies which the independent distributor considers to be inimicable to his own best interests, or to advantages which he believes are unfairly used. Brushing aside the less important reasons, I believe it can be fairly stated that there is a fundamental cause for this action. It has been created by the ingenuity of men who have sought to further the scope of the company that employed them without being too much concerned about the effect their actions had on others. They have done what I or other independent oil men might have done if we had been in their position.

We can look at the results today and, in the light of our knowledge now, we might all agree that some things might have been handled better. Are these errors to be corrected within the framework of our free enterprise system as we know it? Is there any desire to correct them? If the independent oil man knew the answer to that question, he might be more sure of his position on the fundamental issue of industry divorcement by governmental decree.

There are today, three bills proposed by Senator Gillette of Iowa to separate pipelines, tankers, barges, marketing.

What They Propose

Senate Bill #571 provides that no pipeline company may transport any product in which it has an interest directly or indirectly nor can it transport products of any person, firm or corporation which it controls, nor the products of any person, firm or corporation to whose control it is subject through stock ownership or otherwise.

Senate Bill #572 proposes to divorce the business of producing, refining, and transporting of petroleum products from that of marketing petroleum products. The bill proposes to make it unlawful to be in marketing while engaged in the business of producing, refining or transportation, nor may the marketing company in any way be subject directly or indirectly to the control of any person or firm engaged in any one of the three branches of the industry mentioned.

Senate Bill #573 prohibits producers, refiners and marketers of petroleum products from operating tankers or barges. The same prohibitions against control by any individual, company or group who are engaged in other phases of the petroleum industry are to apply.

But, Where Will They Stop?

Senator Gillette has proposed similar bills since 1938. He has, without doubt, been supplied with information by some independent oil men, or their representatives, which have occasioned these bills. Until this present time, no progress has been made in enacting these bills into law, but today, we have a government headed by a President who recently said he was in favor of a planned economy. He said he was not in favor of a controlled economy, but so far as I know, the proponents of socialism or a planned economy are willing to admit that it must be a controlled economy, and in practice, that is how it works. Shall we help to pass these bills? I can think of some attractive reasons for so doing, but after the bills are passed, will they then propose to make it unlawful for a fuel oil distributor to sell and service oil burners or own his own trucks. Will they make it unlawful for the gasoline distributor to own both service stations and bulk plants? Where will they stop?

The Petroleum Industry has not been well regarded by the public. The basic faults which have created this poor public impression are tied to the independent distributor's resentments and problems. Can these differences be resolved? Is the industry, small and great, willing to work to the preservation of our sys-

*Jonswold is writing as an independent fueloil marketer as executive vice-president of Arrow Oil, Chicago, but his views have further significance because he is chairman of the Business Management Committee, Distribution Division, Oil Heat Institute, and president of Burning Oil Distributors Assn.

tem? There is no evidence to date of any realistic approach to this problem. We cannot buy public esteem with newspaper advertisements or fine sounding resolutions. The daily actions of the leaders of our industry build us up or tear us down in the esteem of our customers and our government. Whether we like it or not, private management is now a public issue. In our industry, private management rests primarily in the hands of the executives of the supplying companies. Their decisions, the attitudes they display and the guidance they provide for the personnel of their companies and their distributor customers will resolve the question.

The National Petroleum Council to the Secretary of the Interior of the United States recently issued a recommendation for a National Oil Policy. The following statement appears as a part of that report on marketing.

"Efficient marketing of oil and oil products is a major responsibility of the industry. It should continue to support and encourage a system of distribution under which thousands of Independent marketers, integrated companies and others compete to bring the industry's products to the consumer.

"The oil distributor—both wholesaler and retailer—is the channel through which the industry serves the consumer.

"Most oil distributors are Independent businessmen who buy at wholesale. The marketing of petroleum is particularly suited to operations by individuals and small units, and the industry considers that the public interest will be served by continuing to encourage the existing competitive system.

"The industry fully recognized the interdependence of all units in the industry, large and small. It is important to the public and to the industry that the distribution system should be efficient, so that the benefits of progress in all branches of the industry will be passed on to the consumer.

"Marketers should be encouraged to increase their service to the public through continued improvement in distribution methods, the opening of new facilities where needed, the introduction of new products, added conveniences, and courteous treatment.

"The industry believes that competition for consumer preference is the best way to assure each service."

If this statement represents the policies of the supplying companies and if this policy is to be the basis of future actions, the errors of the past will be corrected. This is the first public statement of policy on this subject. It is to be hoped that it was earnestly conceived.

At one time many distributor organizations were taking public stands in favor of the Divorcement Bills. Today many of these groups have started to reconsider this question. It is well that so important a question be weighed most carefully. The independent distributors of the country should be in agreement that there are no other answers before support is given to these bills.

Fundamentally, the independent distributor typifies free enterprise in action. He does not want that freedom destroyed. He should not be led into strange paths without questioning where he is going. He may feel that he has nothing to lose by choosing this route, but he should weigh the evidence and decide whether he is in favor of the proposed legislation or some modified version of this legislation, and he should make his decision known through his association affiliations.

Freedom promotes progress. But we must exercise our freedom with the voluntary and self-imposed restraint of free men that the rights of all men may be upheld. We cannot take unfair advantage or we cannot legislate against without ultimately paying the bill in one form or another. This question of divorcement, therefore, must be resolved by the entire industry.

Supreme Court Rules Storage Oil Not Taxable

OIL STORED in a public terminal is not subject to property taxes, in a January ruling of the Supreme Court of New Jersey. The point was decided on an appeal by Maritime Petroleum Corp. against a former ruling by the City of Jersey City and the State Department of Taxation and Finance.

Maritime imports to the New York area principally fueloils, which it stores on arrival in Tankport Terminals at Caven Point in Jersey City. It withdraws the oil by barge and transport for delivery to several hundred fueloil distributors. Turnover of stocks averages 18 days.

The local tax authorities made an assessment on the value of the oil in storage on October 1, 1942. Maritime believed this inequitable and for more than six years has fought the case through courts, finally winning the point at the highest level. The oil was declared immune from taxation because it constituted "personal property" stored in a warehouse devoted to "storing goods for hire" within the intent of section 54:4-3.20. The ruling further stated that neither the duration of the storage nor the commingling of the stored goods with others of like class for use in the fulfillment of contracts with customers bears upon the quality that makes for exemption under the statutes.

In case your attorney wishes a copy of the ruling, it is No. A-158 September Term, 1948, Supreme Court of New Jersey.

"Backing Up" Causes 25% Of Truck Accidents

RECENT STUDIES completed by Lumbermens Mutual Casualty Co., Chicago, have revealed that backing improperly was the most common cause of trucking accidents. The surveys were made in a number of industries, including fuel and oil, by investigators, psychologists and safety engineers for the company.

In all industries 25% of trucking accidents were found to have been caused by drivers backing up improperly, 13% from inattention and 10% attributed to speeding.

Organize to Sell

The First Salesman to Ask for It Will Get the Business

by

A. E. Coburn

WHILE CHIPPING ICE in the driveway on a recent Saturday afternoon, the contemplation of Gov. Dewey's most recent speech was interrupted by a smiling, red-faced man.

"Mister," said he, "had you noticed that the dogwood on your lawn is badly damaged?"

"Yeah," I answered, trying to understand what that had to do with the Taft-Hartley Bill. "Ice storm last winter tore the side off it. Probably should take it out, but I haven't gotten around to it."

"That's a good tree," my visitor persisted. "I'll bet it makes quite a picture from your living room window when it is in full bloom. You don't want to lose it. It takes too long to grow a dogwood to that size, but that tree needs attention, and fast. See here." And he led me to a lower branch; showed how the growth between joints had slowed in recent years; how the bleeding of last spring had all but killed the tree, and explained the need for repair and feeding.

Twenty minutes later when the visitor left me to continue with ice clearance, he had an order for thirty dollars' worth of tree surgery and tree fertilizer. A half hour before I'd have paid twenty dollars to anyone who would remove the tree and haul it away.

The contemplation of Dr. Dewey and his ideas gave way to amazement. I had been *sold* and thoroughly. That $30 out of the maintenance fund should have gone toward repairing a torn gutter at the rear of the house. I had meant to get that fixed as soon as the weather warmed. Any sheet metal man could have sold the job any time he asked for it. That loose stone in the back steps should be cemented in place, and a dozen other details around the house were demanding attention. In spite of that, I had bought a sizable piece of tree treatment that I didn't know I wanted. What had happened?

From the salesman's point of view he had made a perfect sale, though not as large a sale as he would have liked. Several other trees needed attention, he said, but when I showed no interest, he concentrated on the dogwood and got that job closed. He had created a piece of business where none existed before. He had no competition except the natural reluctance of the prospect to buy what he had not planned to buy.

By cold canvass he had found a prospect, shown the need for his service, made a clear concise presentation during which he showed he knew his business and convinced the prospect of his firm's ability to perform the service, and asked for the order. The sale was so logical and orderly that the order came as a matter of course at the conclusion of the presentation.

From my point of view I had found new value in a piece of property I had considered more a liability than an asset. The salesman brought up a picture of the tree in full bloom—a hope I had abandoned—and created a desire to preserve the asset I once had. His word picture of the termites eating the dead wood; or the ice splitting new seams in the trunk; of the disease and blight that might follow, all created a sense of urgency if I were to reclaim this asset. Torn gutters, stone steps, repairs for the terrace—all these things could wait. I was given an opportunity, if I acted immediately, to preserve a piece of property I had given up as lost.

There is a vast difference in the services offered by tree surgeons and the oil-heating industry, but there is no difference in the methods required to get business. To sustain any business over a period of time it requires that new customers and new business continue in a never-ending flow. The rate of flow determines the size of the business, but the absence of flow marks the beginning of the end. To establish and maintain this flow of business requires salesmanship, and salesmanship currently is the country's most critical shortage.

If there is any doubt about the shortage of salesmanship, ask your wife how long it has been since anyone rang the doorbell to inquire what kind of vacuum cleaner she is using, or to sell her a washing machine, refrigerator, automobile or radio. And how long has it been since anyone called to inquire what fuel the family uses for heating? How long since anyone tried to sell you a truck, a piece of pipe, or a new typewriter?

Emphasis in recent years has been on buying rather than selling. Salesmen became expediters trying to get preferential rights to scarce goods and materials. That day has gone. Our chief scarcity today is customers, and it is going to require at least as much work to find them as it did to find materials in the recent past. The first person to ask for business intelligently is the one most likely to get it.

Untold thousands of people in the country have millions of needs and not all the ready money to satisfy all needs at once. Left to make their own decisions and in their own time, thousands will decide to buy oilburners, but more thousands will buy a deep freezer or a television set. With a little help—intelligent selling—many of them can be shown that a new automatic oilheating system will deliver more comfort and satisfaction than anything else in the family "want book." It is that selling, yet to be done, that will make this one of the in-

dustry's best years instead of one of its poorest. The decision is in our hands. Delay now is dangerous. Other industries are getting their sales forces together to make their bid for the consumer dollar.

Sales in the volume we need in the years immediately ahead will call for real selling power. Depending on the size of the operation and the market, it will call for the addition of from one to twenty full-time men in each dealer operation. Even in the smallest dealership the boss needs help if he is to do an adequate job. His time should be more valuable managing his men and his business than spending it trying to get all the business single-handed.

Salesmen — good salesmen — come from the most unexpected places. They frequently are the sons of friends at the club. They may be route salesmen now driving a milk or bakery truck, or the fellow behind the cigar counter, dissatisfied with the monotony of their present jobs. They may be helpers in your installation crews or clerks at the bank. It is necessary to let them all know that there is a good future in oilheating sales for them.

An accepted and satisfactory way to find men is by advertising in the classified section of your newspapers. Whether you start the ad "Salesmen Wanted," "Opportunity" or "Young Man with Car" makes little difference. The essential element is honesty. The job should be at least as attractive as you make it sound. Your men must have confidence in you and in the fundamental honesty of the entire organization if they are to be successful, and any overstatement soon will be found out.

One of the industry's most successful sales managers has hired hundreds of men for his own organization and later for his dealers through newspaper advertising. "In the old days," he says, "we used to hire twenty men in the hope we could find two who were good. That entails waste we cannot afford today. Now we don't try to make the job sound more attractive than it is. We call it an opportunity to work, and for those who can qualify, to learn an interesting business.

"There is one idea we get into every ad," says the old sales manager. "We are careful to tell our prospective salesmen that the job is worthy of their best, full-time effort; that it should be taken as a career and not as a stop-gap while looking for another position. Any man worth his salt wants to know that the job is not temporary or a one-shot, hit-and-run proposition. It is possible to write a classified ad that will bring in the right sort of men, and discourage those who think they can work it for a few weeks' drawing account. Time is valuable and we can't afford to waste it interviewing or training men with little chance to succeed."

Training Is Essential

Any man hired is worth as thorough training as it is possible to give him. It is unfair to the man and to the company to turn him out on the street without the training that will allow him to compete. A few hours in the office and a handful of literature does not make a salesman, or equip an experienced man with the knowledge of the organization and product he should have. To a new man it is almost fatal to his budding career in selling. He deserves the best sales tools and equipment it is possible to give him and some coaching in their use by an experienced man.

Better dealer organizations do not neglect continued training and drill for even the most experienced men on the sales staff. Periodic sales meetings give an opportunity to compare experiences, introduce new ideas and heighten the competitive spirit so necessary to good selling. New men must have this continued training and experienced men can benefit by it if the meetings are properly conducted and kept constructive.

The number of salesmen needed should be determined after a survey of the market. The local newspaper or real estate board usually can supply figures on the number of owner-occupied homes in the community. There should be a salesman for every 3000 owner-occupied homes, and it is preferable to assign a man to a specific territory and make him accountable for the business that should come out of the area. Many dealers have found that when the entire city is open territory it too often becomes the responsibility of nobody. With prospects scattered, salesmen tend to spend too much of their time traveling rather than with nearby potential customers.

Regardless of the details the dealer may decide is best for his organization, it is certain that he needs sales manpower, and lots of it, as fast as he can recruit and train the men. Only those who ask for business will get it in adequate volume now and in the years immediately ahead.

The lush era is over in the oilheating business. High living costs and the high cost of those things people think they want have drained off the easy money. Though there still is a record amount of money in consumers' hands, they are looking carefully at the goods offered, and having difficulty deciding what to buy first. This indecision makes this an ideal time for selling. Those industries that get organized and tell their stories first are likely to get the business.

◈

Shell Plans Tank Farm At Searsport, Maine

COMPLETION of plans contemplated by Shell Oil Co. to build a tank farm at Searsport, Me., would make that town the second largest oil receiving harbor in the state. The town, thirty miles south of Bangor, would be surpassed as an oil center only by South Portland, terminus of Socony-Vacuum's recently completed 127 mile pipeline for moving finished product to Bangor.

Construction of the tank farm would enable Shell to meet competition in serving customers in the inland areas.

The Bangor & Aroostook Railroad is working with Shell on the project and, it is expected, that the depot would be built on the railroad's land and would unload tankers and barges at the railroad's terminal docks.

◈

Clyde B. Lynde, according to a recent announcement from Eagle-Picher Co., Cincinnati, Ohio, has been made vice president and general manager, Insulation Div. He joined the company in 1933 as Joplin insulation district manager and head of the Insulation Contracting Dept. After ten years he left to form his own company, distributing Eagle-Picher products in the Houston, Texas area. His experience encompasses nearly all phases of home and industrial insulation.

Low Pressure Burners

3. Operating Principles and Service Hints on General Electric

Third of a series by
Fred Feigenbaum* and
John E. Dignam*

GENERAL ELECTRIC oilburners give the average serviceman no trouble at all. He just makes his excuses and leaves. He has been told that the deepest of all oilburner mysteries is under that jacket, and he believes it.

It will not be pretended here that servicing the GE is simple. There is quite a lot to it, but the GE uses no principles that he cannot understand. Its nozzle emits air and oil that have been processed in the Basic Cycle. Its control parts are operated by forces which he has seen at work before. Consider the LA 20-54 series.

With the jacket removed, (a simple operation, by the way), it can be seen that the burner assembly is arranged on a table top. At the right is the power unit, called the Motor Compressor. The motor drives the fan and the compressor on a single shaft. It stands on springs, and the moving parts turn horizontally. Suspended from this unit is the sump. The burner head is at the center of the table top, and fires down.

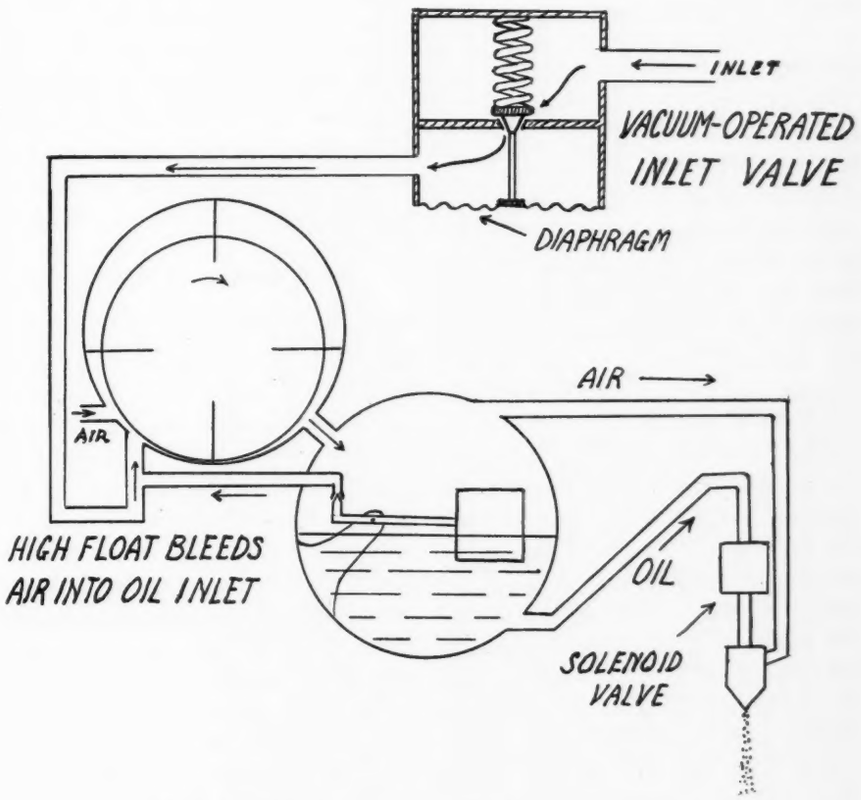
The compressor is the same standard type found in other low pressure burners. It has two vanes instead of the usual four or more, made of steel. The air drawn into it comes down through the motor, cooling it.

The unusual feature of this compressor is that its intake side is divided into two phases, the oil and air coming in separately, so that a relatively high vacuum can be drawn at the oil intake port. This is accomplished by a slot cut into the rotor, just behind each vane. During about 15 degrees of each revolution this slot crosses the oil inlet, before the air is admitted, exerting high suction on the oil. Having passed the port, with its quota of oil in the pumping chamber, the vane moves on, reaching the air inlet. The inrushing air breaks the vacuum, and is compressed in the same way as in other compressors. The mixed oil and air are forced into the sump.

The GE oil inlet system is always under vacuum, the pipes being run at a high level, instead of across the floor. The vacuum from the compressor is utilized to operate the *Screen Valve,* which acts as an operating oil control and as a shutoff valve when the unit is off. While the screen valve is part of the operating system, on inside-tank installations it is located at the tank. When the tank is buried it is located at the point where the oil line comes into the basement. It normally is closed, even during operation, opening only when there is a demand for oil at the burner, at which time it opens in spurts. From 8 to 14 inches vacuum opens this valve.

The controlling force to operate the screen valve comes from the sump. The float is connected by a lever to a needle valve at the top of the sump, which opens as the fuel level rises, causing pressurized air to be discharged into the incoming oil line. When the float is low this needle valve is closed, or partly closed, and the compressor is exerting enough suction to open the screen valve and draw oil. As the level rises the float valve opens more and more, discharging air into the oil pumping side of the compressor, reducing its ability to maintain vacuum, and the screen valve closes.

This is an especially effective method of pumping and controlling the fuel. The large displacement of the oil pumping phase of the compressor has an immediate effect on the suction line when there is a demand for oil in the sump. The pump is able to move oil under conditions which would cause a simple oil pump to fail. The discharge of air from the sump breaks the oil intake sharply, and the closing of the screen



General Electric application of low pressure cycle.

*Automatic Heating Department, YMCA Trade and Technical School, New York.

valve brings it to a standstill in the line, to wait until the next call from the sump. These calls come at intervals of several seconds, longer or shorter depending on the quantity of oil being burned. It will be shown later how these impulses act as a guide to the serviceman in locating problems in the fuel system.

Because of the variations of the quantity of air needed by the sump due to the periodic discharges into the suction system, automatic control of air pressure is necessary in these units. A simple regulator would not be able to maintain a constant pressure.

Air Regulator Valve

The air regulator is of the bypass type, similar to the pressure regulating valves used in high pressure pumps. This valve is located on the right side of the compressor. It contains a bellows, loaded by an adjustable spring. The adjusting screw is locked in place after pressure has been set at 15 lbs., the normal operating pressure. The excess air is bypassed into the air inlet to the compressor.

The air from the top of the sump is sent directly to the nozzle, entering the mixing chamber from the side. The oil travels through its separate tube, its flow to the nozzle being interrupted by a solenoid valve when the burner is off. This valve opens four seconds after the motor starts, the delay providing time for pressure build up in the sump. With other low pressure burners there is no need for a special cut off valve in the nozzle line because the nozzle is higher than the sump. The GE nozzle fires straight down into the unit. It is below the sump level and a cut off valve is necessary to prevent after-drip into the combustion chamber.

The GE nozzle is quite different from the nozzles used in other low pressure burners. Just below the solenoid valve the oil enters a small chamber, at the bottom of which is the oil regulating disc. This disc is horizontal, drilled in the center for a certain rated passage of oil. These vary from 7/10 gph to about 4 gph. Each unit has its own exact size.

Just below the regulating disc the air enters from the side, meeting the oil stream at right angles with great force. A thorough emulsion of oil and air is created by this meeting. This mixture is delivered to another chamber just below, to be straightened out in its travel before it is ejected into the combustion space of the boiler.

There are no whirl slots or similar devices in the GE nozzle, so there is no centrifugal action before the mixture emerges from the final orifice. The spray is therefore narrow, no wider than a pencil at the point where it bursts into flame.

Some of the air from the fan is delivered downward through the burner head, around the nozzle. This supplies some of the initial oxygen for combustion, and keeps the burner head cool. This is a special necessity in a down firing system; it prevents heat from the fire from rising around the nozzle and causing oil cracking to take place in its passages.

Most of the combustion air is supplied from the bottom of the combustion chamber, meeting the oil stream from the opposite direction. This whole meeting and mixing process is unique and effective in producing a high quality, smokeless fire. Its color contains much blue, but the main mass is white and bright yellow.

Ignition in the GE unit is conventional. A 10,000 volt transformer is located near the top of the burner head, and short leads connect it to the electrodes. The spark occurs much farther away from the oil spray than with other burners, but ignition is positive because the air through the burner head assembly blows it horizontally into the spray.

GE Service Problems

The great majority of GE burners run from year to year without requiring much service beyond an annual cleaning. Dealer organizations are instructed by the manufacturer in installation methods designed to minimize service, and standards are maintained high.

Here we will cover only troubles which occur in the fuel system. These are divided into two classifications, the dirty nozzle orifice, and suction problems. Other troubles are rare.

The dirty orifice is seldom found in the larger units, because dirt particles pass right through. In the smaller jobs, roughly from 1½ gph down, it occurs more frequently.

Finding fuel system troubles requires the use of the vacuum gauge. Any deductions made without this are pure guesswork. Even with the vacuum gauge a certain amount of high grade detective work is sometimes necessary. The service man must learn to interpret the gauge reading correctly, because what he sees will often differ from what he has learned to expect when testing other kinds of systems.

Vacuum Gauge Readings

As stated before, he cannot expect to see a constant reading on the gauge, because the suction will vary with the level of the float in the sump. The relationship between the float valve action and the opening and closing of the screen valve will cause a variation of the vacuum gauge indicator of 3 or 4 inches, sometimes more. These variations will occur regularly, longer or shorter intervals depending on the quantity of oil being delivered to the nozzle. In the larger units the fluctuations will take place much more frequently than in the small units.

Suppose we take a properly operating unit and install gauges on the compressor. The vacuum gauge will be installed in the tee marked "Oil in." At the same time a pressure gauge should be installed in the tee marked "Air out." This is to show whether the unit is working at the recommended pressure of 15 lbs. If the pressure is steady at this point, this gauge will not enter the deductions made concerning problems in the fuel system. Don't use a high pressure gauge for this; it will not be sensitive enough in this low range.

With the gauges in place, the unit is started up. The vacuum usually does not rise immediately. The sump is often full at the start, and the float valve is bypassing much air. As the level falls the valve closes part way and the vacuum begins to rise. It moves steadily up, trembling slightly at all points. This trembling will not be considered. Any gauge reading in which the trembling is less than 1 inch will be called "Steady needle."

At about 12 inches the needle will begin to react in wide fluctuations, falling to 8 and rising back to 12. We observe that this takes place at almost exact intervals. It is the condition called

"Fluctuating needle," and is characteristic of GE operation. It is the result of the combined action of the float valve, controlling air discharge into the suction line, and the operation of the screen valve.

This reaction does not take place between the same two points in all GE burners. It may occur between 7 and 10, or between 10 and 14, or in any range of 3 or 4 inches between a low point of 7 and a high point of 14. This is caused by differences in the screen valves. In any case the service man can deduce that a fluctuating needle over a range of about 4 inches, indicates that all is well on the suction side of the system. A steady needle at any point generally indicates some sort of fuel system trouble.

Before making our first test we will remove the observation plate from the front of the unit, in case we produce a flame failure. Start the unit, and when the vacuum climbs to its normal range, loosen slowly a copper tube fitting in the oil intake line. As this fitting is opened wider the vacuum will begin to fall and the needle will become steadier. Below 8 inches the fluctuations will disappear and the compressor will be taking in a large quantity of air but no oil.

The oil level will drop in the sump, and the float valve will close, supplying no more air into the intake. You can control the vacuum at any point between 0 and 8. An air leak in the suction line would do the same thing, so it can be seen that a STEADY NEEDLE in the low range indicates air coming into the line.

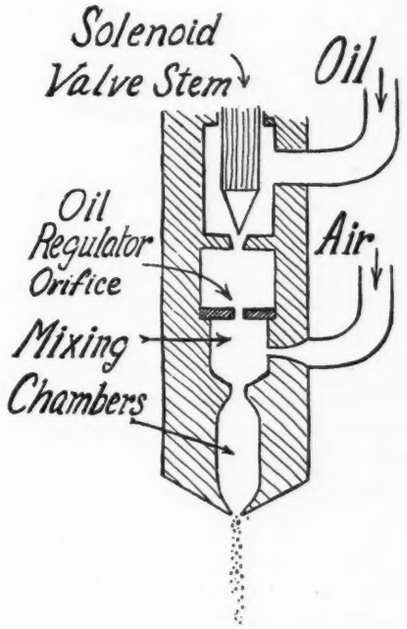
Air and Suction Line Leaks

If we continue the test to the starvation point of the sump, that is, the point at which air begins to get into the oil tube to the nozzle, the fire will become unsteady and finally puff out. The spray may come on momentarily, and ignite off the hot combustion chamber. This happens in the starved sump condition, but there are other causes besides air leaks. This symptom, plus steady needle in the low range, indicates an air leak.

Every service man knows the difficulty of locating an air leak in a suction line. He doesn't generally expect to find it on the first attempt, with any burner. He checks the most logical places.

A good place to start looking for a suction leak with the GE is at the screen valve. This unit is very active, and its diaphragm sometimes cracks with long use. The diaphragm gasket might be affected by the high vacuum on the valve. Oil wetness on the outside of the valve indicates one of these things. The oil leaks out during the off period, when there is no suction.

Copper tubing connections should be checked and tightened. The flares or compression ferrules should be looked at. All hand-valve packings should be checked.



Vertical nozzle principle used in General Electric unit.

To make the next test, tighten the fitting you loosened in the oil feed line and run the burner long enough to fill the sump again. Then, with the vacuum gauge fluctuating normally, close the hand valve on the incoming oil pipe. The needle will begin to rise out of the normal operating range, and after a few kicks, will become quite steady. It will continue to move upward, finally reaching around 24 inches. This is about the limit the gauge will reach with the GE compressor.

With no oil coming in, the sump will begin to starve again. When air gets into the oil tube the fire will fluctuate just as before, but the sump starvation will be for a different reason. The oil cannot get past a complete stoppage in this case, and the vacuum gauge reading indicates just that. STEADY NEEDLE on the HIGH side of normal points out a restriction in the suction line. The sump cannot be kept supplied with its proper level of oil.

Suction leaks on the tank side of the screen valve are rare. You can simulate one if there is a pipe union between the valve and the tank, simply by opening the union. The vacuum reading in this case would be at about the point the screen valve is held open. There might be some dip in the needle as the valve opened and closed momentarily, but it would not appear to be anything like the fluctuation of the normal job. This symptom would also indicate a dry tank, but the serviceman does not need a vacuum gauge to tell him that.

Simulating Stopped Nozzle

Now let us make a test simulating the completely stopped nozzle. With the burner off, remove one of the wires from the master control leading to the solenoid valve. This will allow no oil to flow to the nozzle when we start the burner.

To make this test properly it is necessary to do something to the flame-detector at the rear left side of the unit. This has two sets of contacts, cold and hot. We want to keep the burner running without fire, so we will have to wedge a piece of cardboard between the cold (near) contacts, after the motor has started.

When the burner runs the oil in the sump may be a little low at first, therefore the vacuum gauge may climb to a point at which the compressor draws oil. As soon as the sump is filled to its highest level the float valve will be by-passing enough air to bring the gauge down to zero, or possibly 1. The needle will stay at that point because no oil is leaving the sump.

This means that a gauge reading of zero with no fire usually indicates the nozzle is plugged. It could also indicate the solenoid valve fails to open, though this trouble is rare.

The vacuum gauge can be used to explore more territory on a GE than on other kinds of burners. It not only points out trouble in the suction system, but helps diagnose trouble on the pressure side as well.

One type of dirty orifice trouble found in GE units can be very confusing. It would be difficult to simulate in a properly operating job. Its symptom

in the fire is much like that of sump starvation. The flame fluctuates greatly from normal to failure in some cases, resulting in final safety shutdown.

This is caused by floating stoppage, in which a particle of dirt rolls around over the horizontal orifice disc. It is common enough to deserve special mention. It can be quite confusing, but the vacuum gauge will supply the clue.

In this condition the vacuum gauge will fluctuate between its normal operating points, showing no tendency to become steady. This will indicate that the suction side of the fuel system is OK, and the trouble is to be looked for in the pressure side. If there were sump starvation the needle would be steady, either higher or lower than the normal operating range.

A simple partial stoppage of the nozzle orifice would be indicated by a gauge fluctuating normally but at prolonged intervals. This is difficult to discover, and only experience helps a service man very much. However, a partial clue will be supplied by the customer. The call was probably received in the office as a "not-enough-heat" complaint. The color of the flame will also be a guide, as will its size. It probably will be blue and dazzling white, very lean, and not filling the combustion area.

Sump Flooding

It has been pointed out before that the most serious trouble with a low pressure burner is sump flooding. With the type of burner in which a float valve controls the flow of oil to the nozzle it is always the result of a poorly seating inlet valve, allowing the sump to fill up during the off period.

In the GE, sump flooding is rare. When it occurs it happens while the burner is running. Because the compressor can handle more oil than the nozzle needs, the float valve must limit the flow of incoming oil. It does this by discharging air into the oil inlet of the compressor.

If the float should fail to respond properly to the oil level, the valve might not discharge sufficient air to control the oil coming in. This might happen if the float were sunk, due to a leak; or if its mechanism were stuck; or the valve seat orifice were plugged with dirt.

In any case the oil in the sump would rise to the level at which it enters the air tube to the nozzle. If the action were fast the fire might immediately become oversize, the unit might vibrate, and smoke and odor might appear in the basement. Smoke would come from the chimney.

The excessive over-fire pressure caused by this condition would cut off the burner on the flue pressure switch, a device found on all GE units. This stops the burner under conditions of sump flooding, ignition delay, and sump starvation. The switch must be reset manually, and the owner should not be trusted to reset it. The trouble which caused the switch to open must be found and repaired before the unit is allowed to run automatically again.

The service man unfamiliar with the GE should be cautious about removing the GE sump to investigate trouble. The GE service manuals contain many pages of information about the equipment and measurements related to the sump, and no condensation of this type of information is possible here. Only properly-trained experts in a position to obtain information, assistance and burner repair parts from the manufacturer can be certain of being able to service this equipment properly.

"Yes, I know about carbon paper- but it's so much nicer having things done in triplicate this way!"

GE Conversion Burners
DB 20 series

The GE conversion burner is similar to the other standard, horizontal firing low pressure burners used with standard type furnaces and boilers. Its suspension flame fits the combustion chambers built in these boilers.

The working parts of the burner are exactly like those of the GE unit. The motor-compressor unit is mounted at one side of a platform, on springs, and a flexible connection from the fan to the blower tube absorbs vibration.

The oil is drawn by the compressor through the screen valve, the vacuum valves being the same as for the unit. Air and oil are pressurized in the compressor and delivered to the sump. The float valve in the sump discharges air into the oil inlet system when the fuel level is high.

The solenoid valve is located in the oil line to the nozzle, just outside the sump. When the burner is running the valve is open and oil is driven by the sump pressure to its meeting place with the air in the nozzle.

The oil metering orifice is in the nozzle, just ahead of the meeting point with the air. It can be changed, but another means is provided for adjusting the fire size.

Adjusting Fire Size

The air pressure tee on the compressor, at which the outgoing pressure is checked, is threaded to receive one of two orifice sizes. The smaller orifice reduces the flow of air to the nozzle thereby reducing its pressure in relation to the oil going through the metering orifice in the nozzle, causing a faster oil rate and a larger flame. The larger orifice increases the air and therefore reduces the oil. Using no orifice at all the smallest possible fire is obtained.

Some change in the fire size can be made by varying the sump pressure by means of the pressure regulator. The fire size of these burners is much more adjustable than that in the GE unit, or preceding conversion burners.

Sump pressure is much lower than with the unit. It is difficult to measure at the air tee if one of the orifices is used, because of the pressure reduction through the orifice. It is generally less than 5 lbs.

Because the operating parts are the same as those of the unit, service problems are similar. They are diagnosed by the use of the vacuum gauge in the same way.

The problem of dirty nozzle is rare because of the larger oil passages throughout. The nozzle is similar to the standard type, with slots to spin the oil and air mixture, as in other burners. For this reason the spray is cone shaped.

Fuel Savings Are Possible

Advances Likely from Better Utilization of Fuel Burned

by
W. R. Mook, Jr.

REPEATED EFFORTS are being made to increase the combustion efficiency of oilburners. Some of these efforts have been quite successful so far as combustion is concerned. Much of the potential benefit to the ultimate fuel bill however is very small because of the many other inefficiencies in the heating system. Almost any reputable make of burner of the atomizing type, if properly installed, will burn the present day catalytic fuels completely and with a reasonable CO_2 factor.

We see advertisements every day and have ever since the difficulties of last winter, "Save up to 50% of your fuel" with this or that burner or gadget. If the fuel is already being burned with reasonable completeness and efficiency, how can these inferred claims be substantiated? Again it appears as though perhaps our bread and butter public are being misled and taken in. Many homeowners have invested substantial sums of money in new conversion burners only to find that they burned just as much oil with the new burner as with the old one. When savings did occur, which the home owner attributed to the new burner, he probably did not realize that the new burner installation provided an opportunity to seal the base, clean the boiler, install a new and proper combustion chamber, much of which probably created the fuel savings rather than the new burner.

The overall efficiency of the average heating system is pretty low, regardless of the fuel burned, as can be readily realized by considering a common thumb rule used by many installers to figure firing rates. A gallon of oil is figured for each 300 sq. ft. of steam radiation or 450 sq. ft. of hot water. This means that approximately 140,000 Btu is put into a system to get out approximately 72,000 Btu. Where are all of the losses and what can be done about them? This is the problem for the heating engineer.

These various losses fall into two classifications: those which can be remedied easily and relatively inexpensively in an existing installation, and those which are caused by the installation or the fundamental design of the equipment which is already installed about which little can be done without major changes at considerable expense. Some of the items which fall in the first classification are air valves, quick vents, a properly balanced system, proper boiler baffles, draft regulator, heating main insulation, etc. A few of the items in the second group include boiler design, heating main design, etc. Since we are considering only the heating system we should not mention home insulation and storm windows which of course definitely affect fuel consumption.

Emphasis on Unit Design

Of all of these items, there is one which creates a greater effect than all of the others, again assuming reasonably sound installation practice. This is the boiler or heat exchanger itself. Every other part of the system is dependent upon the heat exchanger and it is one of the least efficient of all of the component parts. It seems also that less has been done to really solve the heat exchanger problem than any other. This is probably true because the heat exchanger is too large and costly to be placed in the gadget class and therefore only the larger corporations who have extensive facilities and funds for experimentation can afford to work on such a problem.

In order to illustrate the potential that exists, suppose we take a typical small average home as an example. This home will have a burner installed which is fired at a one gallon per hour rate. Based upon average figures, this home would probably consume approximately 1200 gallons of fuel per year. At a price of 12 cents per gallon, this would make the fuel cost $144. Let us assume that there are approximately 200 days during the year which require heat and that the burner starts 15 times every 24 hours. During the period from December 15th to March 15th, the number of starts per day will probably be more than 15, but the fall and spring seasons will bring the average very close to 15. This means 3000 starts every season.

In the average home, the burner will operate for at least 15 minutes before useful steam is available from the boiler. At a firing rate of one gallon per hour this means that every time the burner starts there is ¼ gallon of fuel burned for which the home owner receives nothing but an invoice. One quarter gallon multiplied by 3000 starts per season means 750 gallons of fuel burned in this home for which Mr. Homeowner pays at 12 cents per gallon, $90.00 and for which he receives nothing!

Now, we all know that this firing period which is called the "pickup" time, cannot be entirely eliminated. It can be reduced however through improved boiler design. It can be reduced to about one-third of the present average. Using this as a basis, let us look now at some figures to see what this does for the homeowner.

Calculated Savings

When two-thirds of the pickup time is saved, referring to the example above, it means a saving of 1/6 of a gallon of oil on each start. $1/6 \times 3000 = 500$ gallons or $60.00 saved each season. This means a reduction in fuel cost of more than 40% based on our 1200 gallon total. Actually under such conditions there are additional savings, for with such reductions in firing time there are other losses which are reduced, all of which add up to increased savings. In addition to the homeowner, the savings to the oil industry and to the nation as a whole from a raw material conservation standpoint, run into staggering amounts. With the oilburner industry facing a saturation point, it opens up another substantial potential market without requiring increased fuel volume. Again let us look at some figures. The average home in the United States burns 1700 gallons of fuel per year. There are some 4,000,000

homes now enjoying the comfort of automatic oil heat. Using the same percentages as were used in the example, this means a saving in the range of 60,000,000 *barrels* of fuels each year.

We have inferred the use of a steam system in our discussion, however, it has been found that approximately the same savings occur with forced circulation hot water. With warm air systems the savings are not so great for the pickup time is normally shorter with this type of unit. There will be savings however due to the different method of heat transfer from the combustion chamber to the heating medium.

It is impossible to discuss boiler or furnace design in so short a space. It might be timely to mention that many of the so-called gadgets being applied to burners today do have certain basic advantages. Most of these advantages however are of little use today because of the lack of boilers and furnaces to utilize the benefits. Most of the developments in burner design lead to increased speed of flame propagation. This increased rate of combustion principle brings simultaneously an increase in liberation of radiant energy. Scientists have learned much about radiant energy in electronics during the war years, but there is still little known about radiant energy in combustion. At the present moment, the use of "stepped up" flame propagation in the present day boiler is a bit like putting aviation gasoline in a Model T Ford. The performance of the Ford will be improved but it just is not designed to get out of the aviation fuel what is potentially in it. The further development of oilburning equipment is now dependent upon the cooperation and coordination of burner manufacturers and boiler manufacturers for the utilization of new methods of combustion and heat exchanger principles. Fuel savings of 50% are possible but will depend on the development of new ideas and equipment to accomplish it for all users.

Oil Heat Exposition Approaching Sell-out; Sessions Arranged

THE NATIONAL OIL HEAT EXPOSITION, being held at Mechanic's Hall, Boston, Mass., May 16 through 20, is about 90% sold out, according to C. F. Curtin, exposition manager and secretary-treasurer, Oil-Heat Institute of America, Inc., New York 16, N. Y., sponsoring organization. It is expected that all available exhibit space will be contracted for by the end of March. One hundred and fourteen exhibitors had signed up by February 15, with additional space contracts under negotiation.

The Institute is holding its 26th Annual Convention in conjunction with the Exposition—convention sessions being scheduled for the Hotel Statler and equipment exhibits in Mechanic's Hall.

A. E. Hess, managing director of the Institute, commenting on the show and discussing the optimistic outlook for this year's business, says ". . . everyone recognizes that some good old-time selling is in order, and that is where the National Oil Heat Exposition is coming in for serious and enthusiastic consideration by forward-looking companies which see it as the focal point for product showing and merchandising developments. The industry will show its latest equipment, and I understand considerable in the way of innovation will be unveiled."

Convention sessions open with a meeting of the retiring board of directors, followed by the annual meetings of the Institute's Accessory and Distribution Divisions. The Institute annual meeting will be held on the morning of May 17, with the new board of directors gathering at a luncheon meeting.

On Wednesday, May 18, morning activities consist of an industry session with a similar meeting planned for Dealer Day, Thursday, May 19. Also on May 19 the annual banquet and entertainment will take place in the Hotel Statler. The final day, May 20, Architects' and Engineering Day, is to be featured by a morning technical session.

Eligible to exhibit at the Exposition are all manufacturers of domestic, commercial and industrial oilburners, manufacturers of oilburning boilers, furnaces, accessory equipment, installation and service items, as well as producers of air conditioning equipment as related to oilburning equipment. Also, eligible are companies making heat conservation items, oil companies, related Government and research bodies.

The Institute has adopted the slogan, "Oil Heat—Proved and Approved by Millions," not only to promote the Exposition but also to be used in its future promotion, on literature, letterheads and printed material.

OHI *Staff meets to discuss convention plans. L. to r.: G. T. Kaufman, technical secretary; A. E. Hess, managing director; C. F. Curtin, secretary-treasurer; W. O. Spiess, national secretary, Distribution Division.*

Servicing Furnace Systems

Studied Technique for Start-Up Reduces Service Expenses

by
J. W. Schulz

TWENTY YEARS AGO, the equipment dealer who depended on retail oilburner sales for his income saw excessive service costs in his worst nightmares. In his sweetest dreams he saw service costs cut in half with the result that a life devoted to oilheating became extremely pleasurable and profitable.

He looked forward to the end of pioneering and experimenting in users' basements. However the typical burner dealer of 20 years ago was wrong when he anticipated, as many dealers did, that in a few years the chances of service department headaches and losses would be ended.

Today the service department picture still contains potential headaches and losses, even though burners and controls themselves are close to perfect, much has been learned about fueloil combustion, and unexpected or spectacular burner misbehavior seldom causes service calls as it did years ago.

Three main factors affect the performance of the burners being installed today and result in service department expenses being high on the list of a burner dealer's worries.

First, many dealer organizations now service entire oilheating plants, whereas earlier they serviced mainly conversion oilburners.

Second, the tremendous popularity of small, well-insulated homes has caused a need for low-capacity heating plants which must be fired at gph rates much lower than were used generally before the war. Increased service work has come of firing burners at very low gph rates.

Third, cat-cracked fueloils are being delivered today. These are more difficult to burn completely and at high efficiency than were the pre-war oils. Many burner dealers and servicemen believe that in addition there is more trouble today with impurities in fueloils and that this, coupled with the trend towards lower gph rates, increases greatly the service problems related to filtering or straining the oil properly, and plugging of pressure atomizing nozzles.

A fourth, and less important factor, which is increasing the service headaches today lies in burner buyers being more requiring regarding heating plant performance, size of oil bills, and the results of combustion tests. Today many service calls are caused by noise or flame pulsation, different rooms heating unequally, alleged excessive oil consumption, and demands from the burner owners that combustion tests be made to make certain excessive losses are not being overlooked.

In many cities in which fueloil is the favorite fuel, the largest oilheating organizations are interested mainly in cutting the costs of servicing furnace-duct type heating plants. Many of these leading burner dealers are installing few conversion burners at the present time. Their great volume of business results from the installation of thousands of oilfired furnaces in the new homes of building developments. The four factors listed above bear particularly hard on the efforts of these dealers to keep down service department expenses.

The owner of a new oilfired furnace-duct system requires service, and places service calls for misbehavior in any part of his heating system. He does not demand service only when the burner or its controls need attention. Many of his service calls relate to plugged air filters, humidifier difficulties, unusual noises from the circulating blower, need to balance the heat properly by adjusting dampers in the ducts, and noises in the duct work when the circulating blower starts or stops.

From a realistic point of view, today a burner expert cannot decide that he will service only the burner and burner controls of a winter air-conditioning system. Owner satisfaction does not result from servicing only the burner and its controls, while disregarding the heating plant specialties which need expert attention. The more stubbornly a burner service organization refuses to pay attention to air filters, circulating blowers, and humidifiers, the more calls it receives related to these specialties.

To minimize the cost of service work in new homes heated by furnace-duct systems, then, it is necessary to plan to render complete oilheating service. Such a service anticipates beforehand all the problems and questions the home owner may face during the all-important first year of no-charge for answering service calls. Because service calls and service department losses result from disregarding the humidifiers, circulating blowers, and filters in these furnace units, these items are taken into consideration in drawing up a service plan supposed to minimize service calls.

The accompanying eight-step plan covers starting and tuning furnace units fired by pressure burners.

Step One, fitting the burner with the proper nozzle and checking the gun tube assembly and ignition system parts, is routine work in starting a pressure burner. Only this special consideration applies to low-capacity furnace units designed for pressure burners: Obtain information from the manufacturer of the furnace regarding the best nozzle to use in the particular furnace model. In actual practice, usually the serviceman gains considerably by knowing the gph rate, spray angle, and spray characteristics (hollow-cone or full-cone spray) of the nozzle which the furnace manufacturer finds best for the particular design of furnace and firebox. In certain

Start-Up and Tune-Up Steps for Furnace-Duct Systems

1. **Remove the gun tube assembly from the burner and install an atomizing nozzle of gph rate and spray angle to match the capacity and firebox design of the furnace. Before you replace the assembly, check the setting of the spark points. Check also on the settings of the air-handling parts in the gun tube, and make certain that any parts designed to be adjustable with the burner in operation can move freely. Replace the gun tube assembly, being careful to connect or arrange properly the high tension cables or bus-bars of the ignition system. Fit the fuel unit with a pressure gauge.**
2. **Open the flame observation door, start the burner motor, and fire the burner, air-ridding the fuel unit if necessary.**
3. **Adjust the flame tentatively for clean burning to heat the firebox and chimney. Check the atomizing pressure. Use the air damper on the burner and any air-handling part adjustment devices the burner has to give a flame of high efficiency and of the desired shape. Adjust the smokepipe draft regulator to provide a trace of over-fire draft.**
4. **While giving the furnace, firebox, and chimney time to warm up, adjust the high limit control and make certain it can start and stop the burner. Adjust the circulating blower control and make certain it can start and stop the blower. With the burner idle, remove the stack control from the smokepipe and then start the burner. Check to make certain that the burner stops "on safety." Turn the burner on and off using the room thermostat, checking roughly on the sensitivity and calibration of the thermostat. Make certain that any switches provided for this in the basement or at the top of the basement stairs are wired properly to stop the burner.**
5. **Check the furnace for proper operation of the humidifier and circulating blower. Lubricate the blower and blower bearings while you do this, and at the same time lubricate the bearings of the burner motor. Inspect the air filters.**
6. **Make final adjustments of the oil-burner to arrive at the highest efficiency practical for the installation, then make complete combustion tests.**
7. **Check over the general operation of the air distribution system. First, check on the adjustments of the dampers in the warm-air supply ducts, making suitable thumb-rule adjustments if these are needed. Second, check the supply and return registers in the different rooms, aiming to find out roughly if the air-flow is correct and making certain that adjustable registers are set properly and that heat control dampers are in good working order.**
8. **If possible, give brief verbal instructions to the owner or his wife, tack up and call attention to the instructions you will leave on the job, and demonstrate the equipment briefly. Indicate that within five or six weeks you will call again to check on the performance of the equipment and answer any questions which might come up.**

instances, servicemen report that best results have come from using only the particular make of nozzle indicated as best for the unit by the furnace manufacturer's engineers.

In going through Steps Two and Three, the serviceman still follows the routine which is usual for starting pressure burners. To play safe, always fit a new pressure burner with a pressure gauge. If according to the principles you follow there should be 100 lbs. pressure for the nozzle, check to make certain the new burner gives this pressure and not 80 or 120 lbs. If you on the other hand believe in using from 75 to 150 lbs. pressure, or some other range of pressures in efforts to obtain best results, of course you need the pressure gauge to give information on your pressure adjustments.

Dealers and service managers who do the most thorough service work always instruct their sevicemen on the bonnet control settings mentioned in Step Four. For example, in one organization the rule is to set the high limit controls at 175° and the blower controls at 120°, and to use maximum sensitivity of adjustable differential controls. A serviceman in this company may use other settings when for good reasons he chooses to do this, of course, but when he does he is supposed to leave a note inside the control for the company's other servicemen. This gives the date of any switch in settings, the before and after settings, and perhaps a word or two on the reason for the switch. It is signed by the serviceman. The idea of leaving such a note is particularly advantageous where burner owners keep on taking servicemen's time with questions and arguments about the starting and stopping of the burners and circulating blowers. The note helps also where tinkering home owners take it upon themselves to try different control settings.

Step Four includes making certain that in case of ignition failure the control panel will stop the burner "on safety"; there's no excuse for failure to check on this important phase of control operation. By raising and lowering the setting of the room thermostat slowly and noticing the room temperature and the thermostat numbers at which the burner starts and stops, an experienced serviceman can assure himself quickly that the thermostat is working reasonably well with respect to calibration and sensitivity. If the room temperature as indicated by the thermometer on the thermostat is 70°, for example, setting the thermostat up to 71° or 72° should start the burner. Lowering the setting to 68° or 69° should stop the burner. Before trying to find out if the room thermostat starts the burner properly, make certain that the burner is not being kept idle by a hot stack control or an open switch in the high limit control.

Try the on-off switches in the basement and at the top of the basement stairs, where burners have these switches, and make certain the proper size fuse is being used for the oilheating system. It is the serviceman's responsibility to ascertain that the wiring and controls of a new installation are in good working order, and that the entire installation is ready for safe, dependable operation. Minor oil leaks should be detected and eliminated, including even those so slight that they will do no more harm than cause a spot on the basement floor.

Step Five puts the burner serviceman in the business of servicing winter air-conditioning systems, as it deals only with checking the humidifier, circulating blower, and air filters. The policy of the company which employs the serviceman dictates what must be done about humidifier shortcomings. Certain companies which service burners but do not install furnace units make a point of refusing to run water lines to humidifiers which the furnace installers forgot to connect up. The policy of the burner service company might be "Hands Off the Humidifier." Whichever policy is used, the burner serviceman should be well informed on it. For shipshape operation of a service department, a serviceman must know whether or not he gives attention to humidifiers, and what to tell home owners who point out to him that the humidifiers need attention.

Lubricating the motor-shaft and blower-shaft bearings of the circulating

blower can be done conveniently while lubricating the burner motor bearings. It's important to decide just who is to lubricate bearings for the first year and the following years, the serviceman or the home owner. If this chore is up to the home owner, he should be instructed fully in it.

Check Air Filter, Too

Step Five includes also the attention to the air filter, which is extremely important because low oil consumption and proper heating depend on avoiding the use of plugged filters. When starting the equipment start thinking about this. Also, check the filter to make certain it is in the furnace unit, and is installed properly so that the air supposed to pass throught it does not by-pass it. The instructions for the owner, to be given him without fail, must include the point that plugged air filters waste oil and cause a furnace unit to give insufficient heat on cold days. Tell the owner that in new homes equipped with throw-away filters, as many as five or six new filters may be needed during the first year. The owner should inspect the air filter once a month. Something must be done about plugging when about one-third of the input face of the filter appears so dust-covered that air cannot pass through it. Instructions on cleaning certain types of filters are given by some burner servicemen. Don't fail to impress on a home owner that a dust-clogged filter must not remain in the furnace unit. Finding a filter clogged and caught without a needed new one, an owner should operate the furnace without a filter until replaced.

Step Six deals with the well-known procedure of making combustion tests. Check the over-fire and smokepipe draft, the stack temperature, and the CO_2 content of the flue gases. To be thorough in a way that helps definitely in avoiding service calls caused by chimney smoke and excessive soot deposits in the flues of the furnace, a serviceman must advance today to the use of a smoke tester. Highly practical instruments, designed especially for servicemen, are now available at reasonable prices and give excellent, much-needed data on smoke content of the flue gases.

Step Seven can be completed in a few minutes and makes certain that the dampers in the ducts are in reasonable positions, not turned off, and that warm air actually comes from every warm-air supply register. As the burner serviceman will be troubled in later months by gross shortcomings in the ducts and registers, it is best that he look for these when he starts the heating plant. In one instance, only after hours and hours of wasted time for the serviceman was it discovered that a warm air register had been omitted from the living room, though in the other 79 houses of the particular development this register had not been skipped. In another instance, failure to connect two second-story supply registers to warm air supply ducts caused a series of irritating and expensive service calls. Circulating blowers running backwards have a habit of causing service calls that prove baffling to servicemen who don't bear in mind that this can happen.

Step Eight, instructing the home owner, can take ten minutes or an hour depending on the policies of the service organization. The big thing is to have control over the factor and avoid forgetting to instruct five home owners, while spending two evenings with the sixth simply because he insists on it. Points on instructions about air filter attention and burner and blower lubrication have been covered. Make up your mind regarding whether you or the home owner will tend to lubrication for the first year, and don't at any time assume that he will take over the responsibility unless you tell him to and give him proper instructions.

The demonstration of the equipment is extremely helpful in avoiding service calls, particularly when made with a view to blocking calls caused by starting and stopping of the burner and the circulating blower in ways the home owners do not understand. Try to head off calls about cool air coming down from warm air registers, about the burner running a few minutes then stopping before the blower starts, and about the blower taking several short runs after the burner stops on a cold day. Head off calls also by assuring the owner you will call back within five or six weeks to check over the equipment thoroughly and answer the questions that often come to the mind of the new owner of a winter air-conditioning system.

Fire Underwriters Issue Heating Safety Standards

A PAMPHLET, issued by and available from National Board of Fire Underwriters, New York 7, N. Y., sets standards for all types of heating appliances and equipment now in common use. Titled, "Building Code Standards of the National Board of Fire Underwriters for the Installation of Heat Producing Appliances, Heating, Ventilating, Air Conditioning, Blower and Exhaust Systems," the pamphlet includes much of the information which appeared in the 1943 edition of the NBFU Recommended Building Code. For the first time, it now is available separately.

All of the material has been revised and brought up-to-date and the provisions can be used by any municipality regardless of whether or not it has adopted the National Building Code.

Test Todd Fog Dispersal System At Los Angeles

FIRST TESTS of one of the units employed in the thermal fog dispersal system, developed by Todd Shipyards Corp., have been made at the Los Angeles Airport. A refinement of the original wartime-developed FIDO (fog intensive dispersal of) system, it is the first commercial installation for airline and private aircraft use and will be formally accepted by the City in March.

The Todd system consists of 392 triads or mounts, each with three jet-atomizing nozzles consuming diesel fuel. Units, spaced 10 to 75 ft. apart and 400 to 870 ft. from the center of the runway, parallel 4,000 ft. of the main east-west airport runway and fan out 2,000 ft. into the approach zone. Triads are mounted 14" above the ground and are connected by underground pipes to distant fueloil storage tanks. Jet-atomizers are ignited by push button control from a booth through electrical dual igniters.

It is estimated that the system will turn 75 ft. ceilings into 300 ft. ceilings, visibility of ⅜ of a mile to more than ¾ of a mile, in a matter of two minutes at a cost of $200. The intense heat generated raises the saturation point of the atmosphere, inducing it to absorb water vapor over and near the runway.

Revised Installation Data Show 455,245 Burners in 1948

by

Robert Gray

AFTER GETTING the year end figures on factory shipments of oilburners and units, and eleven months totals on burner exports, it is now feasible to make a final estimate on the industry's activity for 1948.

Total installations of distillate oilburners and units were approximately 455,245, or about one percent less than the preliminary estimate published in the January issue of FUELOIL & OIL HEAT.

This is the first year in many in which installations were considerably higher than factory shipments. At the start of 1948 dealer stocks of burners were extraordinarily high (108,858) primarily because the oil supply scare had choked off sales faster than the dealers could control their inventories. At the end of the year, dealer stocks were 58,972 (revised from January issue) so the decline in dealer stocks was 49,886.

Factory shipments for the year are estimated at 412,859, and of these just about 7,500 were exported. Thus factory shipments to domestic accounts were approximately 405,359. Adding to these the burners that dealers installed out of their own stocks brings the total installation estimate of 455,245.

There have been numerous requests since the first of the year for a state breakdown of 1948 installations. In studying the table, it should be recognized that the largest units are the most nearly accurate.

The division by states has been worked out from a broad industry sampling. The number of returns was great enough to afford considerable accuracy in the figures for the seven main divisions of the country. They are also reasonably accurate in the total installations for each state, but naturally not as exact when we break the state down into the various types of installations.

In other words, the more we split up the original sample the more chance for error in the small details. However, the various breakdowns are useful for general needs.

Because of the serious oil shortage in some parts of the country in 1948, and the many gloomy predictions about future oil supply, an extraordinary number of oilheating users converted to other fuels during the year. These losses are estimated at 40,950. In making up the table, an estimated share of these losses was taken into account for each state. They were heaviest in the Midwest and on the Pacific Coast. Thus to arrive at the state figure for the total number of burners in use on December 31, 1948, we took the number of burners in use at the start of the year, plus those installed in new homes, and those sold for conversions from other fuels, and then subtracted the estimated number of losses for the year.

Distillate Oilburner Installations By States, 1948

	Burners In Use 1/1/48	INSTALLATIONS 1948 — New Homes	Replacements	Conversions	Total	Burners In Use 12/31/48
Maine	48,713	2,258	737	1,613	4,608	52,333
New Hampshire	39,015	3,908	1,276	2,791	7,975	45,513
Vermont	12,732	305	100	218	623	13,187
Massachusetts	352,160	23,902	7,805	17,072	48,779	391,315
Rhode Island	47,886	2,378	776	1,699	4,853	51,716
Connecticut	161,607	7,625	2,490	5,447	15,562	173,845
TOTAL NEW ENGLAND	662,113	40,376	13,184	28,840	82,400	727,909
New York	667,208	27,255	20,041	32,867	80,163	723,445
New Jersey	332,686	9,299	6,838	11,213	27,350	351,261
Pennsylvania	286,939	12,339	9,073	14,878	36,290	312,485
Delaware	22,306	1,007	741	1,215	2,963	24,398
Maryland	166,777	3,855	2,834	4,648	11,337	174,309
District of Columbia	48,509	730	535	881	2,146	49,836
TOTAL MID-ATLANTIC	1,524,425	54,485	40,062	65,702	160,249	1,635,734
Virginia	90,797	1,530	898	2,850	5,278	95,024
West Virginia	445	6	3	11	20	450
North Carolina	34,445	1,318	772	2,454	4,544	38,159
South Carolina	11,336	798	468	1,484	2,750	13,599
Georgia	7,923	187	110	349	646	8,446
Florida	33,112	1,694	993	3,155	5,842	37,915
TOTAL SOUTH ATLANTIC	178,058	5,533	3,244	10,303	19,080	193,593
Michigan	134,312	22,796	6,332	13,087	42,215	166,851
Ohio	47,332	4,119	1,144	2,364	7,627	52,637
Indiana	42,441	6,428	1,786	3,690	11,904	51,504
Illinois	144,369	11,786	3,274	6,766	21,826	159,325
Wisconsin	100,759	10,283	2,856	5,903	19,042	114,436
Minnesota	137,673	10,796	2,999	6,197	19,992	151,238
Iowa	48,960	3,786	1,052	2,174	7,012	53,701
Missouri	57,810	4,533	1,259	2,603	8,395	63,508
Kansas	6,093	682	189	391	1,262	7,006
Nebraska	32,718	3,163	879	1,816	5,858	36,882
South Dakota	17,734	1,448	402	832	2,682	19,572
North Dakota	14,396	2,289	636	1,314	4,239	17,641
TOTAL MIDWEST	784,597	82,109	22,808	47,137	152,054	894,301
Kentucky	4,411	148	87	277	512	4,829
Tennessee	8,260	212	124	391	727	8,849
Alabama	6,042	200	117	372	689	6,604
Mississippi	1,037	36	21	69	126	1,140
Arkansas	1,836	65	38	121	224	2,019
Louisiana	8,655	168	99	313	580	9,121
Oklahoma	1,214	43	25	80	148	1,335
Texas	24,401	854	501	1,591	2,946	26,804
TOTAL SOUTH CENTRAL	55,856	1,726	1,012	3,214	5,952	60,701
EIGHT MOUNTAIN STATES	55,670	1,309	504	3,222	5,035	59,112
Washington	131,696	3,332	3,460	6,022	12,814	138,474
Oregon	77,288	2,305	2,393	4,165	8,863	82,247
California	180,817	2,287	2,375	4,136	8,798	183,702
TOTAL PACIFIC	389,801	7,924	8,228	14,323	30,475	404,423
TOTAL UNITED STATES	3,650,520	193,462	89,042	172,741	455,245	3,975,773

Stack Control Trouble

fueloil & oil heat Short Short Article on Burner Service

AMONG THE hard-working parts of a gun burner installation are the open-contact motor switches found in most burner control panels. Each time the room thermostat circuit closes because heat is needed, the motor switch of such a panel must snap shut and start the burner motor. Later the thermostat circuit opens and the switch contacts separate and stop the motor.

Considering that the motor contacts start and stop many burners 4,500 times a year and others as often as 15,000 times a year, it is not surprising that the contacts sometimes need attention.

An expert service man knows, of course, which switch is the motor switch in the control panels he usually works on. Facing the need to check on this or to locate the motor switch in a control he has never worked on before, he makes simple tests. Starting the burner, he observes which contacts close in the control panel when the motor starts. Several sets may snap shut; he must ascertain which set starts the motor. With the burner idle, he selects a likely switch and inserts a strip of paper between its contacts to prevent them from closing. Then he puts the control panel through its motions of starting the burner, pressing in all the relay devices if necessary. With the strip of paper blocking open the motor contacts, the motor will stay idle while the relay devices are pressed in manually, but withdrawing the strip of paper will start the motor.

Once he knows which contacts start the motor, he examines them. If they are in poor condition, he decides whether to replace the control panel or try to fix the faulty contacts. A man capable of delicate, instrument-type work may decide to make the contacts work properly, especially when he hasn't a good replacement panel with him and finds himself 25 miles from his shop at two o'clock on a zero morning.

Take precautions if you use the paper strip method to locate the motor contacts or if you start the burner by making any other unusual moves. Keep the firing door of the furnace or boiler open. Be prepared to stop the burner quickly if you accidentally start it with no ignition. Don't cause a "puff"!

Summoned because a new burner had been acting up ever since a period of low-voltage, a factory engineer decided to check the motor contacts of the burner panel.

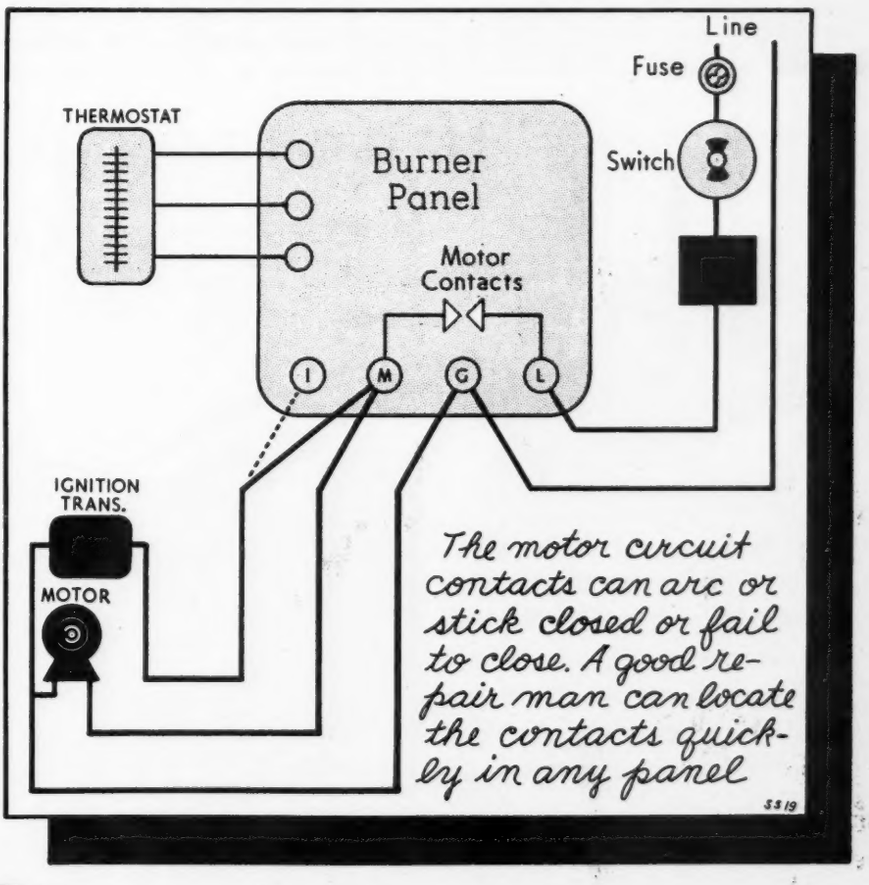
The current had failed for an hour, said the burner dealer, then 40 to 60 volts had come to the house for half an hour instead of 110 volts. The job had suffered since from delayed ignition even though its ignition transformer had been replaced. As the drawing shows, the transformer had been switched from intermittent (dotted line) to continuous ignition.

To check the motor contacts, the factory engineer turned on the burner for about five seconds while the dealer held its blower, keeping the motor from turning. Watching the panel, the factory man saw that placing a prolonged starting load on the motor contacts by this procedure made them arc and splutter.

A few tries, using this test method, proved (a) the spluttering of the contacts gave low-voltage to the motor and ignition transformer with the burner trying to start, and (b) the pitted motor contacts failed to open at times when the main switch was opened or the low-voltage thermostat circuit was broken. Fused together, the contacts stayed "on." This could keep the burner motor running with the safety switch open in the low-voltage circuit of the panel.

Declaring that spluttering of the contacts is worse than failure to close, the factory man immediately ordered the dealer to install a new control panel. He explained that the motor contacts of the original panel had been damaged while the burner tried to start during the period of low voltage.

Today, motor contacts probably give no trouble on 99 jobs out of 100. But, knowing how to check them is just one more trick the genuine expert has up his sleeve to help him in a pinch.



Socony-Vacuum Maine Pipeline Transports Finished Product

CEREMONIES on January 15, held at the Socony-Vacuum Oil Company's plant in South Portland, Me., marked the completion of a 127-mile pipeline between that city and Bangor. A previously built line moves crude from Portland to Montreal oil refineries, but the new line is the state's first for carrying finished product.

The new line, designed to move heating oil, kerosene and gasoline, was begun last Summer after delays due to shortage of steel for pipe. It runs 31 miles north to Lewiston-Auburn, cuts northeast 27 miles to Socony-Vacuum's bulk terminal at Hallowell and continues northeast to Bangor.

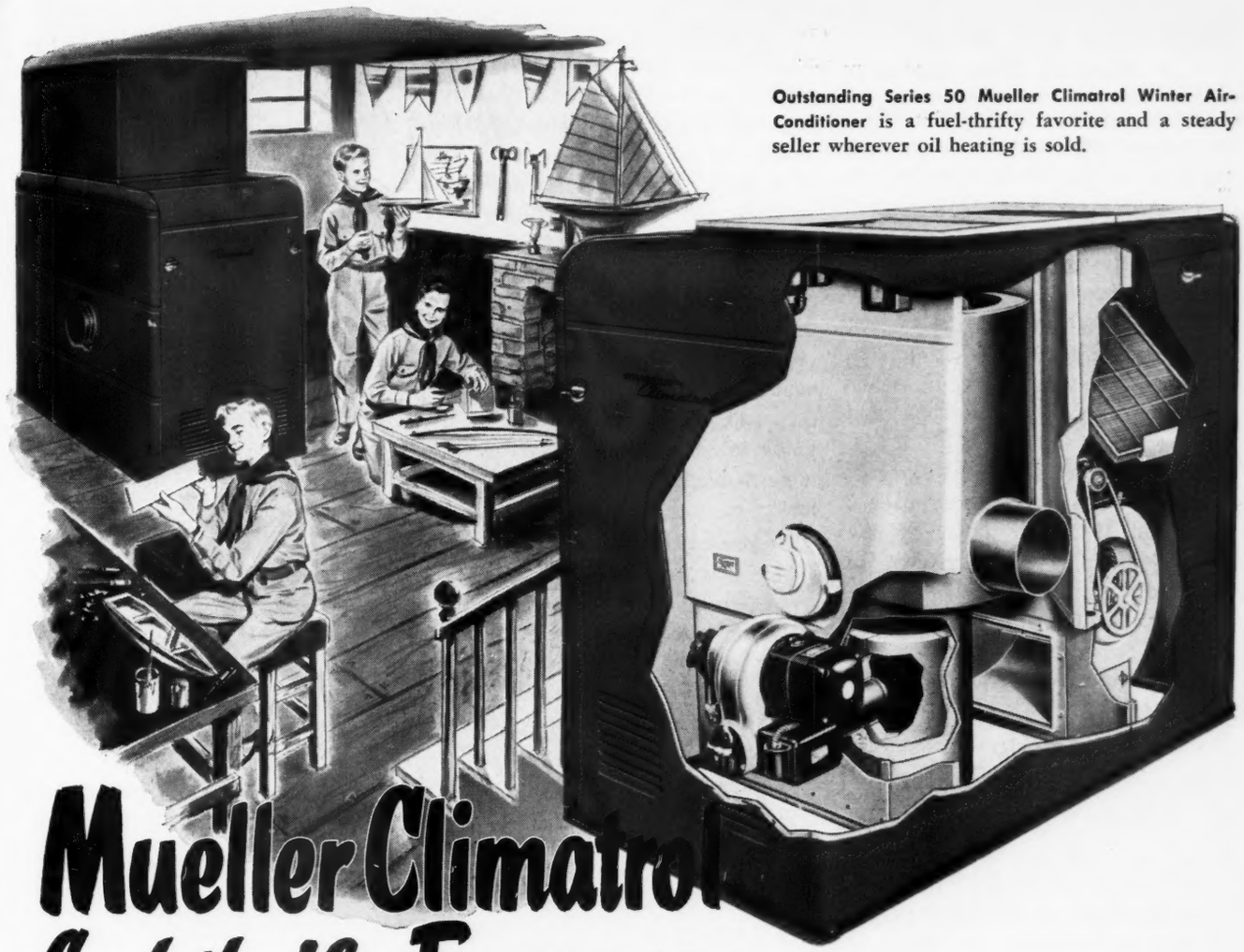
With rivers usually ice-bound in this area for three months out of the year, the pipeline—6" in diameter all the way—will permit movement of product directly from the South Portland marine bulk terminal storage plant where tankers can discharge cargoes all year.

The marine terminal has a capacity of 660,000 barrels, now being expanded an additional 60,000 barrels, and its facilities have been improved by addition of a pumping station. Direct pipeline delivery now is possible to a 28,500 barrel terminal at Auburn and 100,000 barrel terminals at Hallowell and Bangor. Distribution from these points will be made by highway tank trucks.

In addition to problems presented by the rock and timber to be cleared during its construction, the pipeline had to cross the Androscoggin River south of Auburn and at Hallowell, where it crossed the Kennebec River, it was necessary to go below the barge channel into solid rock.

This month's front cover depicts a section of the pipeline being lowered into a ditch in the bottom of a stream, with wooden slats protecting the pipe's corrosion-resistant covering during handling. The upper portion of the pictures at the left of this page shows a section of coated pipeline being lowered onto a skid, preparatory to placing in the ditch and a view, in the lower portion, of pipe sections being welded.

A ditching machine hard at work in the path of the pipeline, at the lower left, is contrasted with the same machine bogged down in the mud and operating under difficulties.



Outstanding Series 50 Mueller Climatrol Winter Air-Conditioner is a fuel-thrifty favorite and a steady seller wherever oil heating is sold.

Mueller Climatrol *fuel-thrifty* Furnaces build your sales with their "low-cost comfort" appeal

There are many selling points — points of superiority —in every oil-fired furnace in the Mueller Climatrol line. But when you come right down to it, *fuel economy* is the most important point to most of your prospects. That's the appeal to talk about. It brings you the most sales.

Mueller Climatrol fuel economy is hard to beat. You know that. You don't have to take a back seat with this line. More than 92 years of Mueller experience has given you a line that is engineered to give the *most* comfort for every gallon of fuel burned.

Emphasize fuel economy, no matter what feature of Mueller Climatrol design you're talking about — from the long-life heat-exchangers and efficient burners to quiet blowers and handsomely designed cabinets.

The more you tell about *fuel-thrifty* Mueller Climatrol Furnaces — the more profitable sales you write up. Send for complete information on the Series 50 and other units in the complete Mueller Climatrol line of oil-fired heating equipment . . . *L. J. Mueller Furnace Company, 2009 W. Oklahoma Avenue, Milwaukee 7, Wisconsin.*

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F-44

fuel oil & oil heat

Majors Sell 29% Retail Fueloil Men Estimate

THE FUELOIL DISTRIBUTORS throughout the country believe that 29% of heating oil is sold at retail by major oil companies. Obviously, no one knows exactly what this figure should be since it is impractical to make an actual volume count, but the composite opinion of several hundred fueloil men as to what share of retail business the majors have in their own cities should be reasonably right when applied over the whole country.

It is interesting that on two previous checks of this same question, made in 1941 and 1945, the dealer opinions were 29% and 27% respectively. This would indicate that the majors lost retail position during the war years and regained it since then.

◈

Mayor To Act On New York Smoke Bill

ON FEBRUARY 10 New York City's Board of Estimate unanimously approved a local law establishing a board of smoke control in the Department of Housing and Buildings to combat air pollution by smoke. The law has been referred to Mayor William O'Dwyer for his action after a final public hearing.

Under the bill, introduced in the City Council last June and passed February 1, a five man board would be established to deal with smoke problems that now are supervised by five city agencies.

◈

Eastern Natural Gas Mostly For Enrichment

THE FEBRUARY 6 issue of the New York *Daily News* had a two column article glorifying the new 30" pipeline for natural gas that is expected to start in May and be completed by late 1950 or early '51. This line, called the Trans-Continental, will run from Mercedes, Texas, to New York and its output will be used by the various gas utilities in the metropolitan area.

The newspaper article repeats a common misconception—that the opening of this line will greatly improve the gas situation and in effect bring more active competition to oilheating.

The present plans of the gas utilities around New York call for using this natural gas to displace the oil that they now use for enriching the basic coal gas. There will be no increase in the Btu value (still 540) and as a result the lines under the streets cannot serve any more homes than with the present type of oil-enriched gas. Because the natural gas is cheaper than fueloil for enrichment, or at least it was when the project was approved, the utilities will save some money, but it is hard to imagine that they will pass much of this on to the public in reduced rates, since today it's more fashionable for utilities to raise rates.

By about 1954 there is a prospect that another gas line, mentioned as 36" size, will reach the New York area and the plans are that this shall make possible selling a mixed gas of about 800 Btu. If this materializes, gas competition will become more vigorous, because then the present distributing lines will be able to carry about 50% more heat in the same footage of fuel.

Most, but not all, of the natural gas to reach the Eastern Seaboard in the next two or three years will be used for enrichment of the lean manufactured coal gas.

◈

Housing Increased 22% Since 1940, Says Committee

AVAILABLE housing in U. S. cities and towns has increased by more than 22% since 1940, according to Melvin H. Baker, chairman, Construction Industry Information Committee. Continuing, Mr. Baker points out that this is substantially more than the rate of nonfarm population growth for the period, which increased about 18%. Usable nonfarm housing supply is estimated by the Committee to exceed 36.3 million units now, or 6.6 million more than we had in 1940.

Mr. Baker cites Bureau of Census reports to indicate there is about 3.5% more dwelling space per person available than in 1940, but with fewer accommodations available. This apparent paradox is explained as resulting from the abnormal rate of new family formation, high income and purchasing power of the American family with greater consumption of the total available supply of housing than ever before as space standards have improved for the average family.

"I'm listening to 'John's Other Wife'. What are you listening to?"

◈

Billing To Nearest Gallon Abandoned By Mass. Dealers

A RECENT BULLETIN issued by Oil-Heat Institute of New England, Boston 15, Mass., detailed a controversy over the practice of fueloil jobbers and dealers to bill customers at the price of the nearest full gallon. This "Give and Take Method" permitted fractional parts of a gallon of 5/10 or less to be billed at the full gallon indicated on the meter and 6/10 or more to be billed at the next highest gallon.

Complaints registered with John P. McBride, Director of Standards and Necessaries of Life for the Commonwealth of Massachusetts, have brought a letter from him, directed to various oil companies and Sealers of Weights and Measures in Massachusetts, declaring the method illegal, where the amount of billing is greater than the amount of fueloil delivered.

Acknowledging the accepted practice of give and take in relation to the penny because it is our smallest coin and not divisible into smaller coins, Mr. McBride points out in his letter:

"I am of the opinion that the same situation does not exist when you have a means of accurately determining the fractional part of the gallon. While it is true that overcharges in an individual sale may run into only a few pennies, nevertheless, this is a charge for merchandise not sold. Presumably, the practice is to simplify bookkeeping, but this is hardly reason for overcharging the consumer.

"The value of the fractional parts of

THE NEW WEBSTER ELECTRIC

Model 6T FUEL UNIT

FEATURES

Instantaneous Cut-off

Self-Contained Extension Strainer

Increased Pump Capacity

Convert to Meet Your Requirements: SPECIFY MODEL "6T"

Extension Strainer rated to 20 G.P.H.

The large tower strainer in the new model "6T" is self-contained and provides for a range of capacities up to 20 G.P.H. without an auxiliary strainer. It utilizes the standard concentric open end cylinder design that has proved so efficient on thousands of Webster Fuel Units.

Increased Pump Capacity

Gear face width and over-all length have been increased to provide greater capacity in the model "6T." The suction stage has a higher capacity than the pressure stage so that on long lines or with sub-gravity tanks the lines are emptied quickly even when small air leaks are present.

Instantaneous Cut-off

Nozzle pressure is cut off instantaneously by means of a magnetic release valve. Fuel flow stops immediately. There is no flutter, no smoke, no carbonization of nozzle tips and electrodes. Many manufacturers are converting Model 6T Fuel Units to secure this modern feature on large capacities.

In Canada, Webster Electric Fuel Units are made by Canadian Acme Screw & Gear Ltd., Toronto

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fuelfoil & oil heat

the gallon can of course be predetermined on a card to furnish your drivers so that it would be an easy matter for him to make this calculation."

Attorneys for OHI of New England agreed that under the provisions of General Laws Chapter 94, Section 177, it is illegal to bill a consumer for more product than he has received unless the consumer and the oil company have agreed on a specific method of billing.

Accordingly, the Institute suggests that a provision be inserted or rubber-stamped in contracts, stating an agreement exists between the customer and the oil company to permit the give and take method in billing fractional gallons of fueloil. Until contracts are so changed, companies are billing customers for the actual amount delivered.

Activity in this regard is limited to Massachusetts, according to Fred N. Beckwith, executive secretary of the Institute, but the principle of law is accepted in each of the other five New England states.

Gas Heating Costs Advance In New York City

RATE INCREASES granted to Consolidated Edison Co., effective January 10, have added about 49% to the bills of almost fifteen thousand gas heating customers. The new rates start with a charge of $1.00 for the first 500 cu. ft., contrasted with an initial charge of $1.15 for the first 3000 cu. ft. under the old rates. The old rates continued with $.075 per hundred cu. ft. for the next 6,000 and $.05 per hundred for all additional cu. ft.

Under the new rate set-up after the first 500 cu. ft., charges are $.125 per hundred for the next 2,000 cu. ft., $.10 per hundred for the next 3,500, $.09 per hundred for the next 4,000 and $.08 per hundred for all over 10,000 cu. ft.

P. E. Lakin, former vice president in charge of marketing at New York, has been appointed executive vice president, Shell Oil Co., New York 20, N. Y. He will serve as Shell's senior representative on the Pacific Coast, with headquarters in San Francisco.

U. S. Department of Labor Fueloil Prices December

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken Dec. 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	14.53	14.35	12.28	..
Manchester	15.27	14.80	12.28	..
Portland, Me.	14.20	14.20	12.30	..
***Buffalo	15.55	..	13.84	13.84
**New York	..	..	12.71	..
Philadelphia	..	13.50	12.00	..
**Chicago	15.40	14.88	13.57	13.92
***Detroit	..	14.83	14.11	13.29
Milwaukee	..	15.16	14.10	14.15
*Kansas City	..	13.31	12.68	12.75
Minneapolis	..	14.83	14.00	14.13
**Baltimore	..	13.36	12.14	..
Wash., D. C.	..	..	13.60	12.30
Jacksonville	..	14.88	14.83	13.48
Norfolk	..	13.40	11.40	11.40
Richmond	..	13.70	11.80	..
Savannah	..	15.00	14.00	..
***New Orleans	..	14.63	12.28	12.88
Portland, Ore.	..	13.94	11.64	7.38
***San Francisco	..	13.70	11.38	7.31
***Seattle	..	14.77	12.65	7.60

*Price includes 1% sales tax.
**Price includes 2% sales tax.
***Price includes 3% sales tax.

John P. Birmingham, president White Fuel Corp., and president, Independent Oil Men's Association, both Boston, Mass., has been appointed to the National Petroleum Council by Secretary of the Interior J. A. Krug. The appointment provides representation on the Council for the independent petroleum marketers of New England.

E. H. Davison has been appointed general sales manager, Williams Oil-O-Matic Division, Eureaka Williams Corp., Bloomington, Ill. Mr. Davison, who has been associated with Oil-O-Matic for many years formerly was manager of heating sales. In his new capacity he will assume dealer-distributor sales supervisory duties, succeeding W. A. Matheson, resigned.

Another Change For Your January Issue

FOR THE BENEFIT of those who file their January issues for reference, the following correction should be made on page 69.

In the table at the bottom of the left hand column the following percentage figures should be changed: 1948 should read 19.7 instead of 11.9; 1946 should read 7.4 instead of 8.0 and 1940 should read 13.5 instead of 15.2. Replacement figures as shown are correct.

The above is in addition to the two minor corrections covered in the item on page 60, February.

E. S. McKay, Schenectady, N. Y., has been named advertising and sales promotion manager, General Electric Company's Air Conditioning Dept., with headquarters at Bloomfield, N. J. With G-E since 1933, except for a two year period, Mr. McKay most recently was assistant to the manager, employee and community relations in the company's Apparatus Department.

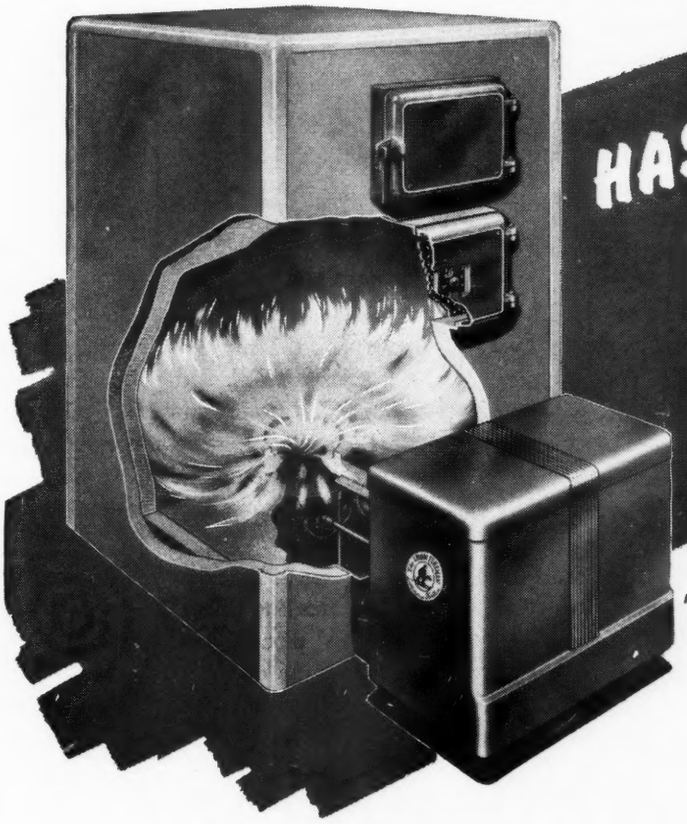
General Harlan L. Mumma, U.S.A., Retired, has been appointed world export manager, Black, Sivalls & Bryson, Inc., Kansas City 6, Mo., with headquarters in New York City. *Earl Ruth,* formerly sales engineer at Kansas City, has been appointed to Gen. Mumma's staff as consulting engineer.

Lou Bergman, sales manager, Jamaica Brass Mfg. Co., has advanced to vice president of the company and will continue to direct sales activities.

Robert J. Hovland and *Paul S. Flack* have recently joined U. S. Machine Corp., Lebanon, Ind., as district sales managers. Mr. Hovland's territory includes parts of eastern Minnesota and northwestern Wisconsin and Mr. Flack's covers southern Ohio and northwestern West Virginia. Both will obtain and service accounts in their territories for Winkler heating equipment.

C. H. Strack has been named general manager, C. L. Bryant Corp., Cleveland, Ohio, to supervise merchandising of its line of heating equipment, including Sphinx oil furnaces.

the IRON FIREMAN *Vortex* OIL BURNER



HAS 6 HOT SELLING POINTS

VORTEX OIL BURNER — CONVENTIONAL GUN TYPE BURNER

THE *Vortex* IS A SALES MAKER

Take advantage of these 6 hot selling points, which are the fruit of Iron Fireman's 25 years' experience in combustion engineering. Carefree operation, sound engineering, outstanding fuel economy are built into this modern, compact oil burner.

Tie in with a Nationally Known Name

The Iron Fireman trademark, with a quarter century of continuous national advertising and user satisfaction behind it, gives the equipment exceptional salability. Iron Fireman automatic heating equipment is known for quality and performance throughout the United States and Canada.

Dealers receive strong company backing, with local advertising, merchandising, and engineering assistance. A thorough training course for retail salesmen is available for individual and group instruction.

1. Bowl-shaped flame, exclusive with Iron Fireman. Starts *above* the grate line and covers the hearth and sweeps side walls. Radiant heat penetrates walls and crownsheet of combustion chamber in same manner as coal fuel bed for which coal furnaces are designed. Every available square inch of heating surface used most effectively. By contrast, conventional pressure type burners release their heat down in the ashpit where it is not so effectively absorbed by the primary heating surfaces of the furnace or boiler.

2. Saves up to 30% on oil bills because the Vortex burns oil more efficiently, gets *more heat* out of the same amount of oil. This has been proved by years of experience in thousands of homes.

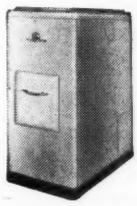
3. Trouble free . . . all moving parts are outside the furnace, protected from firebox heat. Adjustment and servicing are simplified.

4. Burns catalytic oils.

5. Vertical position of oil nozzle protects it from carbonization due to reflected heat.

6. Iron Fireman automatic controls provide precise regulation of day-and-night temperatures.

Write or wire today for information on Iron Fireman oil heating equipment, dealer franchise, and effective, up-to-date selling aids. Iron Fireman has a complete line of residential, commercial and industrial heating equipment for coal and gas, as well as oil. Iron Fireman Mfg. Company, 3140 W. 106th Street, Cleveland 11, Ohio.



OIL FIRED FURNACES AND BOILERS

Designed to take full advantage of the radiant heat of the highly efficient Iron Fireman Vortex Oil Burner. Furnace capacities range from 130,000 to 270,000 B.T.U's per hour. Boiler capacities range from 70,000 to 270,000 B.T.U's per hour. Compact steel cabinet finished in easy-to-clean, baked enamel. Furnace and boiler bodies of heavy welded steel plate.

IRON FIREMAN

AUTOMATIC HEATING

WITH OIL, COAL OR GAS

fuel-oil heat

Reader's Problems

Q. Is there information or literature available about blending of No. 5 fuel-oil from Nos. 2 and 6? Specifically, we are interested in methods in use, proportions used, etc.

D. K. G., Boston

A. So far as can be determined there is no literature available on the subject since each individual blend must be proportioned according to the characteristics of the oils being used. No. 5 fuel-oil can be produced in this manner but considerable care is advised to prevent stratification of the No. 2 and 6 oils. Also it must be accomplished at temperatures around 75 degrees or, if attempted at lower temperatures, preheating of the No. 6 oil will be necessary.

The most feasible method to follow is to prepare first a pilot blend in the laboratory, study it and observe over a period of time whether or not stratification occurs or if the No. 2 oil releases any appreciable amount of sediment from the No. 6 oil. When a satisfactory pilot blend has been prepared, then the process can be applied on a larger scale, under rather rigid control and continued laboratory observation. It is extremely important, too, that the blend be mixed thoroughly either with an agitating device, jets of air or some similar method.

The consensus of opinion seems to be that the process of producing No. 5 from a blend of No. 2 and 6 fueloils is not too risky so long as the blender has sufficient facilities at his disposal to determine first the proper blend for each individual batch of oil being used and then to control the blend and re-check at intervals during the process. It is considered risky to attempt the process unless such tests and checks can be made conveniently.

Q. Forced to use the auxiliary air pipes described in your earlier issues to end pulsation on warm-air furnace installations, now we need suggested sizes of tubes. Our drawing shows two pipes in the front wall of a firebox. These auxiliary air pipes are stuffed with rock wool suitably held in place. Which pipe sizes should we use now for different sizes of warm-air furnaces?

T.A.F., Clarksburg, W. Va.

A. The sum-total internal pipe areas required to end the flame pulsation troubles depend on just how much of the remedy is needed, and on how tightly you pack the nipples with rock wool. On a job where keeping the firing door open 1/8" stops the pulsation, relatively small pipes will end the pulsation, but larger pipes are needed where the firing door must be kept open farther to stabilize the flame.

Try this to start out. For 1.0 gph and lower rates, install one 2" pipe nipple or two 1¼" pipe nipples. For from 1.1 to 2.5 gph, use one 3" nipple or two 2" nipples. For from 2.6 to 5.0 gph, use

ANYONE CAN RING A DOORBELL

Yet Everyone Can't Sell

•

LEARN TO BE A *Selling Man*

FOR the benefit of those breaking into selling and for improvement of active salesmen, W. A. Matheson, Director of Eureka Williams Corp., wrote an exciting book on selling techniques that reads with the fascination of a story book. He calls it THE SELLING MAN. He believes that almost anyone can sell if he'll take the trouble to learn. The techniques he unfolds are practical because he has tested them himself. What you can get out of it will make the $5 cost seem like a tiny price for so much solid meat.

$5 a copy

[we pay postage]

Please send check, money order or cash to avoid bookkeeping on the thousands of small orders we must handle in book sales.

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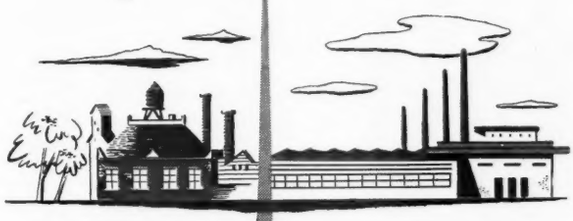
Thatcher



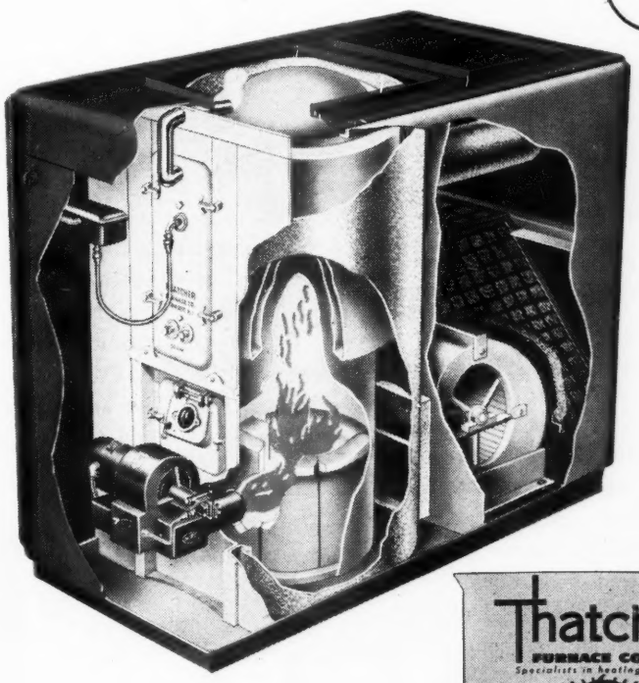
Pioneer **in heating in 1850 . . .**

Leader **in modern home comfort today**

For 99 years in the industry, Thatcher has always been a leader in discovering, developing, and *perfecting* what's new and better in home heating.

Typical of Thatcher's advanced design is the "V" series Comfortmaster – featured next month in Small Homes Guide. It's a completely automatic, oil-fired winter air conditioner. For the home owner, it's a lifetime investment in carefree comfort.

You'll find superb units for most *every type* of residential heating need in the one Thatcher line. So make a partner of Thatcher's long experience in building modern, trouble-free equipment. Recommend Thatcher—for a minimum of trouble, a maximum of efficiency.



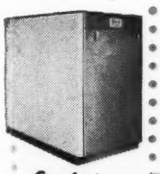
7 reasons why it's EASIER TO SELL the Thatcher "V" series Comfortmaster

- Flange Mounted Oil Burner
- Modern Maroon and Grey Slip-Joint Cabinet
- Tailor-Made Combustion Chamber
- Automatic Vaporizing Humidifier
- Squirrel Cage Type Blower
- Welded Steel Gas Tight Radiator
- All Parts Easy To Reach

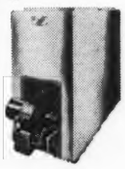
Thatcher FURNACE COMPANY
Specialists in heating Since 1850

Specialists in Heating since 1850

GARWOOD, NEW JERSEY



New 550 Oil-Fired Winter Air Conditioner



Comfort-master Oil-Fired Winter Air Conditioner

New Comfort-master Gas-Fired Winter Air Conditioner

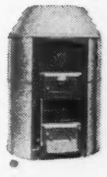
A-204 Oil-Fired Winter Air Conditioner

Triple-Fire All-Purpose Boiler

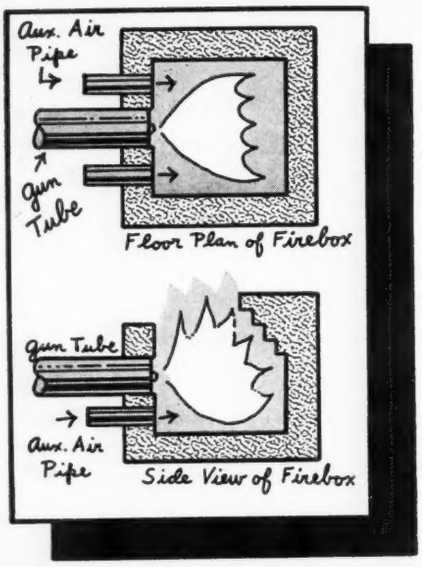
481 Series All-Purpose Winter Air Conditioner

Oilmaster Automatic Oil-Fired Boiler

C-174H Coal-Fired Forced Air Furnace



Thermaster Gravity Furnace



two 3" nipples or three 2½" nipples.

By experimenting at closing off partways the nipples of these sizes which you have installed, you may learn later that you can cure the pulsation troubles by using smaller size nipples.

A thumb rule is to provide four square inches of auxiliary air pipe area for each gph.

* * *

Q. A five-gallon forced warm air furnace has been operating 12 years on intermittent ignition. We got an odor complaint. Testing out the job we found the fire was leaving the nozzle and making a splattering fire on the floor of the combustion chamber. We changed the nozzle without any results. Changed oil filters and cleaned out the pump. No change. We changed from intermittent ignition to constant ignition and the spark held the fire at the nozzle. Have you an answer for this one? The chamber is not too long and the fire rolls up the back wall for two feet.

R.T.W., Detroit.

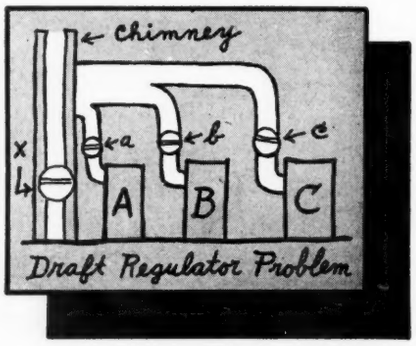
A. With the spark off the flame floats away from the nozzle for one of these reasons: (a) a switch to fueloil which does not turn to burnable gas as readily as the oil used earlier; (b) deterioration of the firebox which causes the flame and firebox to be cooler now; (c) development of air leaks around the gun tube, firebox, or furnace base, which cause the flame to be cooler; or (d) the use of air-handling parts in the oilburner gun tube which are not suitable for present-day fueloils.

As in this instance atomizing the oil better may help, try still other nozzles in an effort to wind up with exceptionally fine atomization. If you ever use atomizing pressure as high as 150 lbs., try such high pressure on this installation together with a nozzle size which gives you the needed gph rate.

Modern burners with the best of air-handling parts in their gun tubes seldom give this trouble. You may need such a burner for excellent combustion using the fueloil being delivered to this job.

* * *

Q. This institution has three boilers A, B, and C, of different sizes and used at different times. Draft readings close to the chimney, taken in the big breeching, are high as .55" water at times, low as .25" at other times. Plainly, draft regulation is needed to save fuel. We will install the usual swinging type regulator that lets cold air into the chimney to lower excessive draft. Should one very large draft regulator be installed at the chimney base, "x" in diagram? Or should three regulators be installed, "a," "b," and "c," one for each boiler?



How about interference between boiler drafts with separate regulators?

I.R.S., Philadelphia.

A. Best results probably would come of installing the four draft regulators you show, setting the chimney-located draft regulator at perhaps .30" and setting each of the other three draft regulators for perhaps .25" draft. Different settings than these might have to be used but the idea would be to maintain the breeching draft slightly higher than the draft needed at the smoke outlet of each boiler, and aiming to use about the same smoke outlet draft for each boiler.

Instead, you could obtain good results by installing the three draft regulators at the boiler smoke outlets, aiming to set these for about the same draft, and installing over each a lock-type turn damper or butterfly damper. Tune and lock the positions of the turn dampers after you install the draft regulators. Close each turn damper so far that you obtain only the desired draft on the boiler with the particular boiler fired at the highest gph rate ever used in it. Installing the turn dampers and tuning them in this way minimizes the three draft regulators' interfering with each other.

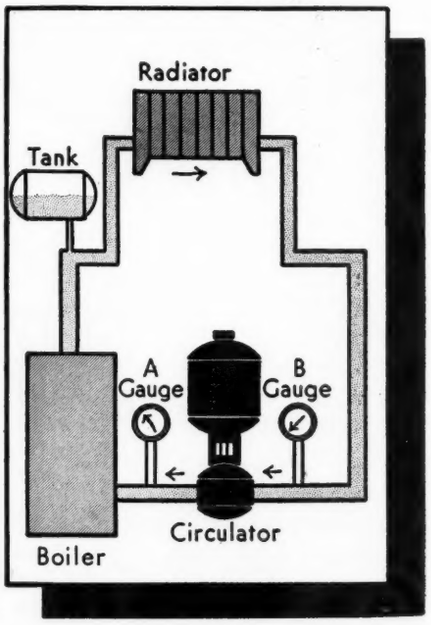
* * *

Q. Compared to atmospheric pressure, does the circulator in a closed hot water system pull or push the water through the radiators? Please settle a long-standing argument that causes the men in our outfit many headaches and may bring them to blows.

D.A.O., Brooklyn, N. Y.

A. Your men might as well switch to arguing about which came first, the chicken or the egg.

There's little sense in bringing in the point about atmospheric pressure. In the first place, with the circulator in the diagram running you could put water into a closed system or take out water and make either Gauge A or Gauge B read zero. Making Gauge A read zero (zero gauge pressure, or pressure at A equals atmospheric pressure) would put a vacuum at B, making it seem that the circulator develops a vacuum and pulls the water from the radiator. Making Gauge B read zero gauge pressure would give a pressure at Gauge A, perhaps making it seem that the circulator pushes the water to the radiator. As the system operates the same with either gauge at zero, there's no sense in clouding the argu-



NEW 200,000 BTU

OIL-FIRED SUSPENDED FURNACE

Companion model of the Gilbarco 100,000 BTU Suspended Unit, this new furnace of double the capacity will **more than quadruple** the opportunity for sales of suspended installations.

The tremendous demand for suspended furnaces has been proven by the smaller 100,000 BTU model, introduced several months ago. Now with this new unit the avenue is open to the hundreds of thousands of stores, schools, garages, service stations and similar buildings which require greater capacity than the 100,000 BTU Furnace can supply.

The dealer who doesn't carry a line of suspended furnaces is missing out on the units in which interest is keenest in the oil heating field today. Why not get into this profitable market? Write for full information on the Gilbarco Suspended Furnaces of 100,000 and 200,000 BTU capacity, both equipped with the exclusive feature that makes selling easy—the famous fuel-saving Economy Clutch.

Gilbarco

THE OIL BURNER WITH THE ECONOMY CLUTCH

Gilbert & Barker
Manufacturing Company
West Springfield, Mass.,
and Toronto, Canada

CONVERSION AND REPLACEMENT BURNERS • BOILER BURNER UNITS • WARM AIR CONDITIONERS • INDUSTRIAL BURNERS

ment by bringing in the factor "compared to atmospheric pressure."

In the second place, with the system operating satisfactorily and the pressure of either gauge at zero or at a usual level, altering the atmospheric pressure would not affect the system pressure on an absolute basis, and would not affect the circulation within the system. By stretching your imagination, you can picture that the circulation and absolute pressure in the system would be the same if you reduced the atmospheric pressure considerably or even to zero, or if you increased the atmospheric pressure by five or ten times.

The circulation is caused by the circulator's creating a pressure difference in the system. That is, the circulator causes Gauge A to give a higher reading than Gauge B, and as a result the water circulates through the radiator.

* * *

Q. For a 300 gallon hot water tank in a small hotel, what capacity is needed in the direct-fired oil water heater to be connected to this tank?

T.F.W., Chicago.

A. If the tank is of about the correct size for the water heating requirements, you can assume that the new water heater should heat all the water in the tank by a 100° rise in three hours. That means obtaining 100 gallons of water per hour from the oil-fired heater, 100° rise basis. Firing about .85 gph at 70% efficiency would do the job. Select a heater suitable for a higher gph rate if the tank is undersize.

* * *

Q. Connected to an outside tank, a pressure burner fires .65 gph for a small warm air furnace. Now the owner wants to use the same buried oil tank to give No. 1 oil (used for heating) also to a gravity-fed pot-type water heater. Can the pressure burner pump oil to the water heater in any way?

P.S.H., St. Louis.

A. You could keep a 55 gallon oil drum full of oil by connecting it in the return line of the pressure burner. The drum could give oil to the new oil-fired water heater by gravity. The catch is that during the summer the owner would have to run the pressure burner every so often to fill the oil drum and make up for the oil taken from it daily by the water heater.

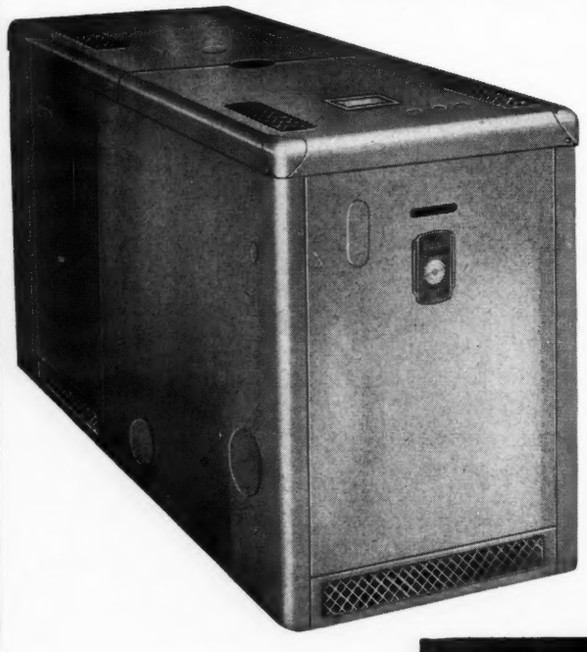
Considering that and the other complications of a make-shift job using an oil drum, you should solve the problem in a shipshape way by installing a wall pump to draw oil from the outside tank and feed the new water heater by gravity. High cost of the wall pump cannot possibly be an objection to using such a pump, since excellent wall pumps for such service are now available at very reasonable prices.

◈

Robert H. Jacobs has become superintendent of schoolhouse control sales, Minneapolis-Honeywell Regulator Co., Minneapolis 6, Minn. In this newly established position, he will work with salesmen merchandising a special line of controls for schools.

Andre S. Rubin, Jr., has been appointed sales manager, Marlow Pumps, Ridgewood, N. J., to direct sales and promotion for petroleum marketing pumps. He has been with the company since 1942, when he was made assistant to the late A. S. Marlow, Sr., founder of the company, and before that was in the Marketing Div., Continental Oil Co.

Keep a step ahead of competition by selling *something really NEW!*



The Bethlehem

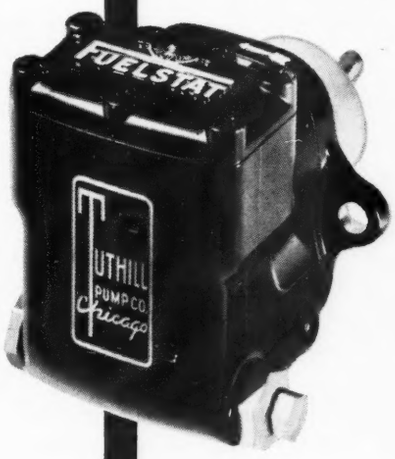
DYNATHERM

Really men, it's the most compact and complete oil burner on the market today! The Bethlehem DYNATHERM employs an entirely new principle of oil burning—the "DYNATHERM Whirling Flame" for maximum efficiency and economy. Results? . . . Your customers get more for their money in fuel economy . . . in compactness . . . comfort and convenience! The Bethlehem DYNATHERM is built by a 118 year old organization of broad experience in oil heating.

A few exclusive Bethlehem Dynatherm territory Franchises are still available. Wire or write immediately for full information.

THE BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

THERE'S NO OTHER PUMP LIKE THE TUTHILL FUELSTAT



Because It's Truly Universal in Application

With the Model 3OEN, Tuthill has produced a Fuelstat which is truly universal in application. Two exclusive features . . . reversibility of rotation and reversibility of nozzle port . . . make it possible for one Fuelstat to fill four separate requirements. Thus, the Model 3OEN can be quickly and easily adjusted in the field for (1) clockwise rotation with left-hand nozzle port; (2) clockwise rotation with right-hand nozzle port; (3) counter-clockwise rotation with left-hand nozzle port; and (4) counterclockwise rotation with right-hand nozzle port.

Write for full details and quotation on your requirements.

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Ill. Phone: REgent 4-7420

TACO-MATIC VALVE

Gives
PERFECT TANKLESS HEATER PERFORMANCE ON FORCED HOT WATER SYSTEMS . . .
just like on steam jobs

IMPROVES LARGE PIPE CONVERSION JOBS
ELIMINATES COPPER PIPE NOISES

TACO-MATIC shuts off tight when boiler water drops below 175°F. Does a perfect job of seeing to it that the water in the boiler is maintained at 180°F. or higher. ***Replaces the reverse action control.*** That's why Tankless Heaters can now work better on forced hot water jobs than they have on steam.

Try this low cost TACO-MATIC valve on your next forced hot water job. *You save the cost of a reverse action control.*

Better Heating — Better with Taco

TACO HEATERS, Incorporated
137 South St., Providence 3, R. I.

Manufacturers Activities

Ohio Electric Sets Up Motor Service Stations

A MAJOR CHANGE in the motor service and distribution policy of Ohio Electric Mfg. Co., Cleveland 4, Ohio, has been announced by Chester Bland, president. Ohio oilburner motors now will be serviced and repaired by authorized service stations appointed throughout the country, instead of being returned to the factory for such work. The service stations also are authorized distributors for Ohio replacement parts and motors.

Fifteen other firms have been appointed as distributors to stock replacement parts and motors, without performing service functions. A complete listing of service stations and distributors is available from the factory.

National Radiator Booklet Gives Cast-Iron Radiator Data

A POCKET MANUAL, available from National Radiator Co., Johnstown, Pa., contains dimensions, capacities, ratings and roughing-in data on both current and obsolete types of National cast-iron radiators. Booklet No. 539, also, includes engineering drawings of radiator sections, rating tables, radiator pedestal facts and information on hangers and brackets.

"Roughing-in Data for National Cast Iron Radiators," title of the book, is meant to be used for selection of radiation for new installations or to determine the amount of installed radiation on existing jobs. Booklet measures 3⅞" by 6¾", printed in black ink on white paper stock.

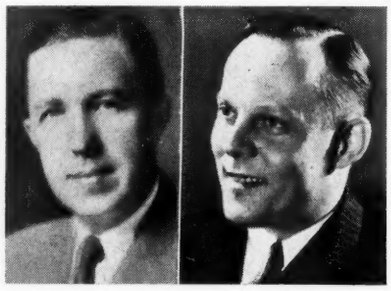
Conco Distributors Meet At Factory Conference

MORE THAN forty distributors and their salesmen attended the 1949 distributors annual conference held at the factory of Conco Engineering Works, Mendota, Ill. for three days beginning January 31. The opening morning session was devoted to an escorted tour through the main plant and other morning and afternoon business sessions preceded the annual dinner, held in the Hotel Kaskaskia, La Salle.

On the concluding day, Walter Sormane, sales manager, unveiled new units being added to the heating line and led an informal discussion on the outlook for heating sales in 1949.

Butler and Black Named To Perfex Executive Positions

TWO APPOINTMENTS to executive positions have been announced by Perfex Corp., Milwaukee 7, Wis. Vice president Allen Butler has been named assistant to President C. E. Lewis and V. P. Black has been appointed a vice president and manager of the controls division to fill the vacancy left by Mr. Butler's promotion.



Black Butler

Mr. Butler, who joined Perfex in 1935 to handle advertising and sales promotion, became manager of its Chicago office in 1936 and managed sales throughout the Midwest. In 1945 he became a vice president and in 1947 manager of the controls division. As assistant to the president Mr. Butler will handle sales contact for the corporation at the executive level and act as company representative in association activities.

Mr. Black comes to his new assignment after an association since 1938 with Airtemp Div., Chrysler Corp. in various executive capacities, most recently as manager of advertising, sales promotion and sales training.

U. S. Radiator Moves Buffalo Branch Office

A ONE STORY BUILDING, providing 4,000 sq. ft. of floor space, located at 1720 Military Rd., Buffalo, N. Y., has been occupied by the branch office of the United States Radiator Corp., Detroit 31, Mich. T. R. Grieves manages the office, which has facilities for both office and warehouse space. Office quarters include the manager's and general business offices and two offices for use of the salesmen. Warehouse space is located in the rear of the building.

A two zone, circulating hot water system heats the warehouse section with U. S. unit heaters and employs U. S. Comfort Ray Radiant Baseboard units in the offices.

Waltham Oil Burner Co. Moves Factory and Office

EFFECTIVE February 15, the office and factory of Waltham Oil Burner Co. was moved to 1214 Bennington St., East Boston 28, Mass., according to Stanley C. Paterson, proprietor.

Winkler Planning Series Of Spring Sales Meetings

MAJOR MEETINGS in six large cities and several sessions at the factory will highlight the series of sales meetings planned by U. S. Machine Corp., Lebanon, Ind. The first of the meetings is scheduled to be held in May and the last in late June in Charlotte, N. C.; Philadelphia, Chicago, Minneapolis, Salt Lake City and Kansas City, Mo. A feature of this year's meeting will be a large truck in which will be transported the entire Winkler heating line for display at the meetings.

Single day sessions are planned, devoted to discussion and instruction on sales and installation, with night sessions being considered to permit fuller coverage of Winkler merchandising programs and policies. Definite dates for the Field Sales-Engineering Institutes will be announced later.

Brown Products New Name Of Brown Electric Company

BROWN PRODUCTS CO., Forest Hills, N. Y., is the new name of the Brown Electric Co., according to a recent announcement. Only a change in corporate name is involved and the company will continue with the same personnel and policies in the sale of Brown-Heet boiler-burner units and Bayce-Heet baseboard radiation units.

Honeywell Publishes Heating Control Handbook

A HANDBOOK, prepared for the heating control installer and serviceman by Minneapolis-Honeywell Regulator Co., Minneapolis 6, Minn., applies to gas, stoker and oilfired systems, whether

GENERAL AUTOMATIC floorline

HOT WATER BASEBOARD HEATING

GENERAL AUTOMATIC FLOORLINE baseboard heating is now available to dealers coast to coast. A complete package . . . adapted for all size homes . . . no radiators . . . heating element concealed . . . Easy to Sell . . . Easy to Install . . . Easy to Store . . . Big Profits for you in '49 with FLOORLINE.

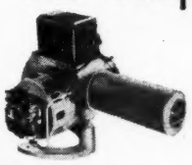
ALL IN ONE PACKAGE

Fin Type Copper Heating Element
Front Panel
Front Panel Splice
Wall Bracket
Front Panel Inside & Outside Miter Corners
End Terminals
Top Moulding
Top Moulding Inside & Outside Miter Corners
End Terminals
Top Moulding Splice Piece

Packaged in 5 Sizes:

#60 for 200 Sq. Ft. of Radiation
#70 for 233 Sq. Ft. of Radiation
#80 for 263 Sq. Ft. of Radiation
#90 for 300 Sq. Ft. of Radiation
#100 for 333 Sq. Ft. of Radiation

The Complete General Automatic Line

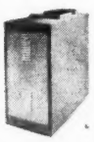


MODEL GAF CONVERSION BURNER

Conversion burners from 1 to 20 gals. per hour, combining dependability and economy of operation. Approved by Underwriters laboratories.

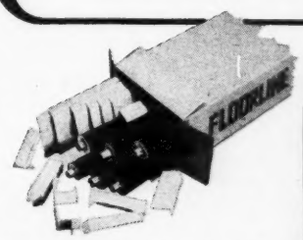
Oil fired boilers for hot water and steam. All steel, large water tubes, quick heat circulation, big fuel savings. A.S.M.E. approved.

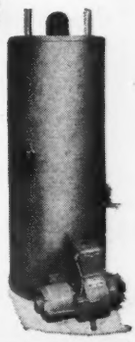
MODEL 'T' SERIES OIL FIRED BOILERS



MODEL '100' WARM AIR CONDITIONERS

Winter warm air conditioners from 85,000 to 200,000 B.T.U. capacity—Reliable, thrifty. Designed for durability.





Model J-3, 20" diameter, 50" high. Easily serviced boiler burner unit. Designed for easy application to FLOORLINE installations. One complete package ready for easy installation and servicing.

GENERAL Automatic

General Oil Burner Corp.
2300 Sinclair Lane
Baltimore 13, Maryland

fueloil & oil heat

warm air, hot water or steam.

Subjects covered in the 72-page, illustrated book include code identification, control circuits, thermostats, limit controls, trouble shooting, transformer specifications, thermostat heaters and others. Purpose of the book, according to Walter Baak, manager, wholesale division, is to provide helpful suggestions for solving frequently encountered installation and service problems.

Copies are available free of charge on written request to Mr. Baak at the company's main office. It is planned to offer it also in quantities to educational institutions for resale through their book stores.

Add Motor Repair Shop At Sid Harvey Branch

AN ADDITIONAL motor repair shop has been established at the New Rochelle, N. Y. branch of Sid Harvey, Inc., Valley Stream, N. Y. It is expected that the shop will speed up considerably motor service for oilburner dealers in Westchester County and Connecticut.

The branch repair shop will be directed by William Neuman, formerly second in charge at the company's main office motor shop. The first branch motor shop had been established previously at the West Philadelphia headquarters of Sid Harvey of Pa.

Perfection Stove Adds Five Salesmen to Force

RECENT ANNOUNCEMENTS by Perfection Stove Co., Cleveland 4, Ohio, told of the addition of five men to sales force of several district offices. In the Chicago District, Jerome H. Wilson joined the staff to cover the southern Indiana territory and George William Smith, new addition to the Kansas City District office, will operate in thirty-five Texas counties, with Austin as his headquarters.

Two men were added to the St. Paul District. Everett C. Taylor will cover the territory comprising southern Wyoming, western Nebraska and western South Dakota from his home city, Scottsbluff, Neb. and P. W. Clemens, operating from headquarters at Billings, Mont., will call on Perfection dealers and prospects in Montana, western North Dakota and northern Wyoming. The final appointee, David Jackson Musick, a native of Alabama, has been added to the Oakland, Cal. district sales office.

Use Electric Eyes To Balance Field Draft Controls

BAROMETRIC draft controls, made by Field Control Div., Mendota, Ill., now are balanced by a new electric eye that must approve the gate balance of each control as it passes off the assembly line.

Equipped with red and green lights, the machine is set so that positioning the balancing weight in its proper place, breaks the red beam and causes the green light to flash, signalling accurate balance.

Griffin Fuel Celebrates Sixtieth Anniversary

THE SIXTIETH ANNIVERSARY of the founding of Griffin Fuel Co., Tacoma, Wash., was marked on January 20 with full page advertisements in the *New Tribune* and *Times*. The advertisements paid tribute to the sixty-seven men and women concerned with fuel delivery and carried a small photograph of each em-

REPEAT PROFITS
GENERAL FUEL OIL FILTERS WITH THE RED TOP FOR LARGE FURNACES OR BOILERS • HOT WATER HEATERS • SMALL FURNACES SPACE HEATERS
Model 1A-25. 4¾" High. 3½" Dia. Filter Unit Surface 31 Sq. In. ⅜" Pipe Openings.
General FUEL OIL FILTER STANDARD MODEL 1A-25
Model 2A-700. 6¼" High. 4-5/16" Dia. Filter Unit Surface 72 Sq. In. ⅜" Pipe Openings.
General FUEL OIL FILTER MASTER MODEL 2A-700
Model 2A-300. 9-1/16" High. 5½" Dia. Filter Size 63 Cu. In. ⅜" Pipe Openings.
General FUEL OIL FILTER DELUXE MODEL 2A-300
YEARLY DIVIDENDS
After making the original sale of a GENERAL FILTER, dealers make a dividend each year through the sale of replacement cartridges. The customer, of course, returns to the dealer who made the original installation —and installation is so simple that it can be made in less than two minutes. If you haven't already done so, investigate the profit possibilities of GENERAL FILTERS. See that each one of your customers has one.
WRITE FOR THE NAME OF YOUR NEAREST JOBBER
GENERAL FILTERS INCORPORATED
GENERAL FUEL OIL FILTER
12890 WESTWOOD AVE. DETROIT 23, MICHIGAN
CANADIAN FACTORY BRANCH: GENERAL FILTERS CANADA, LTD., 173 STRACHAN AVE., TORONTO 3, ONTARIO

fueloil & oil heat

BOOK SHELF

Here's 7 on it YOU May Have Missed

BEACON BOILER BOOK
Only complete, comprehensive boiler book. New and revised edition. Embraces ratings and specifications of every boiler built in U. S. Handy size, 8 by 11 inches.
$3.

BETTER OILHEATING
Covers trouble shooting, field repairs and efficiency tests for oil saving in a collection of articles based on practical experience. For study or reference. 110 pages, 140 illustrations. Size, 8 by 11.
$2.

THE SELLING MAN
Specialty salesmanship in our day with emphasis on burner selling by W. A. Matheson, of Eureka Williams Corp., long a leading figure in oilheating industry. Blue cloth binding, 6 by 9, 260 pages.
$5.

CATALOG OF OILBURNER MANUFACTURERS
350 names of manufacturers of all types domestic, industrial, and commercial conversion burners, boiler and furnace burner units, space heaters, cooking equipments, water heaters, etc. Also 400 trade names. Gives location of company, names of principal executives, and list of products (not specifications). 20 pages, 7" x 10". All paper. No covers.
$2.

BASIC SERVICE TEXT FOR PRESSURE TYPE BURNERS
This manual was prepared by G. T. Kaufman, technical secretary of the Oil Heat Institute of America, and is intended for basic training of installers and service men in residential oil-heating. It is also a useful reference source for those who have completed the training courses. A good, elementary book. Contains quiz questions to brush up with. Pocket size. 216 pages. Paper covers.
$2.

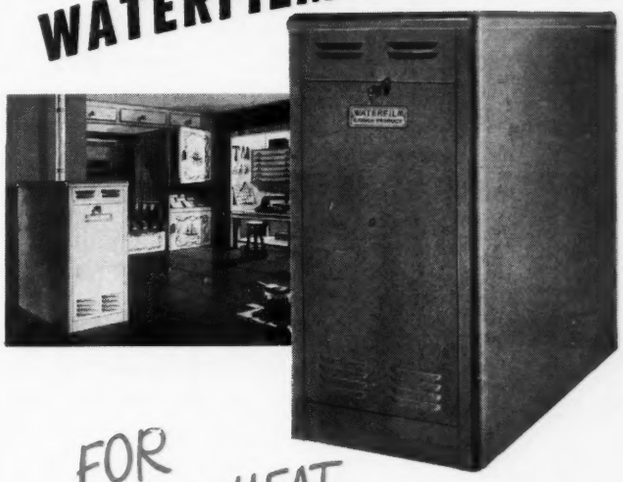
REDUCING FUEL OIL BILLS
This booklet will help you show home-owners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service.
50c

OIL HEATING HANDBOOK
Revision of famous text by Han A. Kunitz giving complete data on all phases of oilheating. An indispensable guide to sellers and installers of equipment. Many illustrations, charts, diagrams and graphs. Lists types of service troubles and includes estimating tables. 456 pages.
$5.

Because of the thousands of small orders we receive we ask that cash, stamps, money orders or checks be sent with all orders.

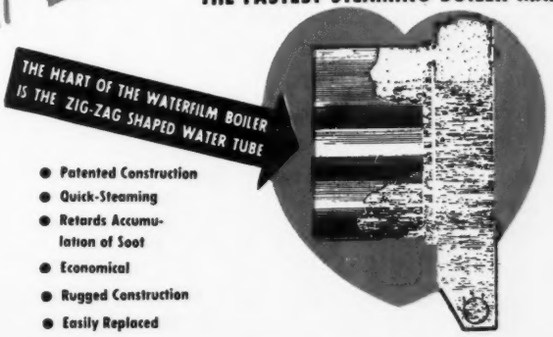
FUELOIL & OIL HEAT
232 Madison Ave. New York 16, N. Y.

Koven WATERFILM BOILERS



FOR FASTEST HEAT AT LOWEST COST!

THE FASTEST STEAMING BOILER MADE



- Patented Construction
- Quick-Steaming
- Retards Accumulation of Soot
- Economical
- Rugged Construction
- Easily Replaced

WATERFILM is the *only* boiler with the patented zig-zag water tube in which a ¾" film of water is turned to steam almost instantly—even before the main body of water in the boiler is warm. That's why a WATERFILM BOILER gives your customer fastest heat and biggest fuel savings. Maintaining even temperature in every room and supplying plenty of domestic hot water, the handsomely jacketed WATERFILM is recommended by architects and builders for its outstanding efficiency and economy.

In models and sizes for small homes, apartment houses and industrial plants. For the large installations, the Sectional Boiler can be taken through a 2-ft. door.

500-17,850 E. D. R.

Write for free literature and newspaper mat service.

NATIONALLY ADVERTISED

WATERFILM BOILERS, Inc.
154 Ogden Ave., Jersey City 7, N. J.
A Division of L. O. Koven & Bro., Inc.

EVEN ROOM TEMPERATURE THROUGHOUT THE HOUSE!

FOR AUTOMATIC FIRING WITH OIL, STOKER OR GAS

ployee. Since the death in 1931 of Fred L. Griffin, who founded the business in 1899, Edwin L. Griffin has been president and general manager of the Tacoma company and Fred Griffin, Jr., has headed the Seattle branch since it was established in 1939.

The company was founded with a horse and wagon, hauling wood, ice, furniture and other commodities in Tacoma and environs. From this small beginning the firm has grown to its present position of major fuel outlet, operating 75 pieces of trucking and other equipment, with a total of eighty employees to staff all its departments.

National Campaign Promotes Heat-Timer

A NATIONAL CAMPAIGN, featuring consumer advertising, being conducted by Heat-Timer Corp., New York, N. Y., extols the benefits of Heat-Timer thermostatic radiator air valves. Launched in November 1948, the campaign is using leading newspapers and magazines, reaching millions of readers.

Advertising is designed to explain how Heat-Timer valves automatically regulate individual room temperatures and how the radiators on which the valves are installed heat only when the temperature drops below the valve setting. When the temperature setting is reached, the valve closes its vent. Supplementing the consumer advertising campaign, the company offers a new mailing piece to dealers.

Herco Elects Officers At Directors Meeting

AT A FEBRUARY 15 meeting of its Board of Directors, the following officers were elected by Herco Oil Burner Corp., Lancaster, Pa.: Chairman of the Board, A. H. Herr; president, H. H. Wilkinson; vice president, John H. Stauffer; secretary-treasurer, Fred A. Wiker.

Fram Corp. Promotes And Shifts Key Personnel

PROMOTION of three men to important key positions was voted at a recent meeting of the board of directors, Fram Corp., Providence, R. I. Arthur F. Pettet, with the company since 1942 and since 1947 general production manager of all company operations, advanced to the position of general manager. He will make his headquarters at the company's general offices.

David C. Buell, general purchasing agent since 1948, succeeds Mr. Pettet as general production manager and will make his headquarters in Fram's Pawtucket, R. I., branch. Succeeding him as general purchasing agent is Bruce C. Miller, former manager of the Otsego, Mich., branch, who will move to company headquarters.

Independent Changes Name To Sun-Ray; Appoints Outlet

NEW NAME of Independent Oil Burner Corp. has been announced as Sun-Ray Burner Mfg. Corp., Jamaica 2, N. Y. No change has been made or contemplated in the location of the company's office or factory, personnel or sales policies. It is producing a complete line of pressure type oilburners.

Mid West Sales Co., 111 W. Washington St., St. Louis 22, Mo., has been named manufacturers' representative for Sun-Ray, another announcement indicates. Directed by M. R. Cardwell and John D. Gibbons, Mid West will handle the line of Sun-Ray, Independent and Marine gun type burners in Missouri, southern Illinois and western Kentucky.

LADIES BE SEATED THE PARTY HAS ONLY BEGUN
LADIES BE SEATED SO LET'S ALL JOIN IN THE FUN!
LADIES BE SEATED A LAUGH DOESN'T COST YOU A DIME
ABC

Tom Moore, *emcee, with a guest from his "Ladies Be Seated" radio program. Burners and units made by Wayne Home Equipment Co., Fort Wayne, Ind., are plugged to more than 100 million listeners on 1000 stations of all networks each week on this and other audience participation shows. Other programs include "Stop the Music," "Hit the Jackpot," "Take a Number" and "Grand Slam."*

General Electric Starts "Shirt Sleeve" Selling

A CAMPAIGN to bring its dealers "Back to Shirt Sleeve Selling in 1949" has been inaugurated by the Automatic Heating Division of the General Electric Company. In a series of meetings during February the staff outlined requirements, presented the advertising program for the year and introduced the "Air Wall" system of heating especially designed to bring the G-E line into the competitive range and make it attractive to speculative builders.

The Air Wall system uses four-inch, prefabricated, round ducts to carry high velocity air to a specially designed register on the outside walls. Warm air is diffused upward and to both sides of the register along the wall, making it possible to place furniture directly in front of the baseboard outlets. Features claimed for the system include quiet operation, warm wall heating, and installation at $10.50 to $11.00 per outlet.

H. M. Brundage, in charge of the division, outlined the requirements of a dealer for the company's 1949 line and campaign. He said the six points every dealer must have to be a member of the G-E team this year are: (1) the ability to sell; (2) the ability to expand; (3) the ability to manage a business; (4) have adequate physical facilities; (5) have adequate financial facilities, and (6) have the determination to do a job.

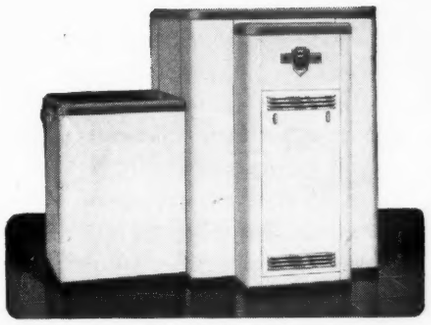
General Automatic Names Wisconsin Representative

APPOINTMENT of Milwaukee Oil Heating Engineers, Milwaukee, as Wisconsin representative has been announced by General Oil Burner Corp., Baltimore 13, Md. E. R. Carey heads the outlet which will handle the line of General Automatic conversion oilburners, furnace and boiler-burner units.

Coleman Marketing Division Consolidates Sales Efforts

CREATION of a marketing division has been announced by Coleman Co., Inc., Wichita 1, Kan., to consolidate all sales, advertising and promotional activities. R. W. Carney, Coleman sales manager, will head the new division as vice president in charge of marketing. Reporting to him are C. L. Burrows, national sales manager, who will direct a staff of four

What Do You Want in the Heating Line You Handle ?

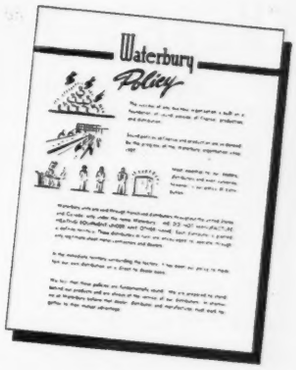


A Complete Line—Nationally Known and Accepted. Coal, oil or gas fired units—gravity or forced air—the right size for every home from the smallest to the largest. Nationally advertised—with established consumer acceptance.

Waterbury *Has It!*

A Sound Dealer Policy

A clearly stated policy toward distributors and dealers that is strictly carried out is essential as a foundation for a lasting and profitable relationship. It should be in print and available to every dealer and distributor.

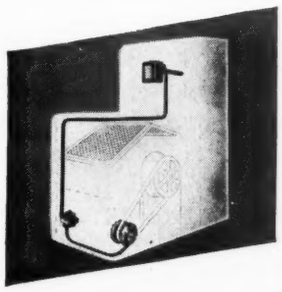


Waterbury *Has It!*

Factory Interest In Every Unit

Every distributor should have resources available to every dealer that will insure satisfactory installation and operation of every unit. The factory should have the means to give real support to this program.

Waterbury *Has It!*



The Answer to Drafts and "Cold 70" Waterbury Has It!

THE MASTER BLOWERTROL

We are convinced that this is the best means of achieving true continuous blower operation —it means more satisfied customers—the end of stratification and "Cold 70". Combined with precision-engineered Waterbury Air Conditioners, it is Modern Perfection in warm-air heating.

"IT'S WHAT'S UNDER THE CASING THAT COUNTS!" and

Waterbury *Has It!*

THE WATERMAN-WATERBURY COMPANY

1171 Jackson St. N. E., Minneapolis, Minn.

assistants; A. W. Boyer, advertising manager and C. B. Corbin, market research manager. A. O. Beyer, former regional south central and southwestern states regional sales manager, is assistant national sales manager in charge of Open Market Div.; F. W. Richards, former manager, Major Appliance Div., is responsible for internal operation of the sales department.

Sheldon Coleman, executive vice president and general manager, revealed also that the Philadelphia branch office is being closed with key personnel transferred to Wichita and that a newly-established branch has been set up in San Francisco, Calif., managed by L. G. Ingram. F. R. Stephens is Los Angeles manager.

Socony-Vacuum Booklet Tells Consumers How Burner Works

A BOOKLET, described as an endeavor to make the consumer more conscious of the need for good service to obtain best oilburner performance, has been prepared by Socony-Vacuum Oil Co., New York 4, N. Y. "How to be friends with your oilburner" is a 32-page pamphlet, employing cartoon illustrations and informal, chatty copy to explain first, how an oilburner operates to supply heat to homes and secondly, the factors that govern oilburning efficiency.

Plans for distributing the pamphlet have been worked out to provide a copy to each of the company's heating oil accounts and also to its dealers for distribution to their customers. Homeowners are cautioned in the book to rely on their oilburner serviceman to check waste and keep burners operating at peak efficiencies. Only in the closing pages—and there only briefly—is any sales copy devoted to Mobilheat fueloil.

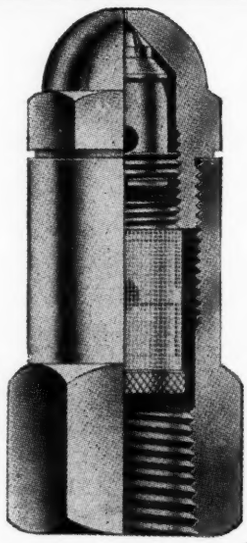
THERE'S TRIPLE SATISFACTION IN EVERY TRIPLE-TESTED EDCO NOZZLE

Here's a nozzle whose fine features of design and sound construction are a triple help to you in serving your customers.

- EDCO Nozzles assure you of *complete customer satisfaction.* They are first rate performers, each one triple tested before leaving the factory.
- EDCO Nozzles stay clean longer because of their large capacity Monel strainers. *They save costly callbacks and needless service calls.*
- EDCO Nozzles are packaged for safety, for easy storage and easy use.

ORDER YOUR SUPPLY NOW for the Spring cleaning season.

Please give complete information about capacity, spray angle, quantity, etc.



EDCO'S New Fuel Oil Filter S-252

has 6 outstanding features

- 98 sq. in. of surface area
- Light weight, only 1 lb. 9 oz.
- Sturdy construction
- Large sump
- Longer cartridge life
- Interchangeable with other makes

Individually boxed, 24 to a case

EDCO

EDDINGTON METAL SPECIALTY CO.

P. O. BOX K, EDDINGTON, PA.

Engineering Development Data In Marlow Pumps New Bulletin

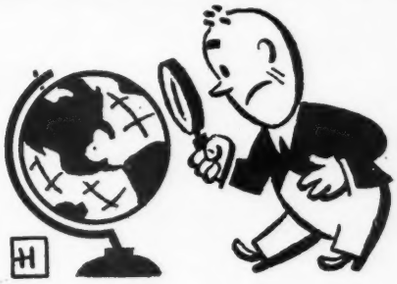
INFORMATION developed on the use of Marlow pumps for petroleum handling is contained in a new 12-page bulletin prepared by Marlow Pumps, Ridgewood, N. J. Calculation tables shown include a table of viscosities for different products with readings given for temperatures from 40 to 100° F., a table giving head equivalents of liquids and another of maximum practical suctions lifts at different temperatures and from sea level to 2,500 ft. altitude. A full page is devoted to a compilation of friction loss in ft. of liquid per 100 ft. of clean steel pipe, covering flow from 15 to 200 gpm, pipe sizes from 1 to 12", viscosity from 31.5 to 300 SSU.

Several pages tell about Marlow self-priming centrifugal petroleum product pumps, classified under engine driven and electric motor driven models. All models prime and reprime automatically, it is explained, and a selection chart and specification table is included for each category. Other construction and operating features are illustrated and fully described. Requests for the new bulletin, PM48, will be honored.

Silvercote Handbook Lists Insulation Values

PREPARED BY and available from Silvercote Products, Inc., Chicago 11, Ill., manufacturers of reflective insulating materials, a 108-page book lists 12,852 certified, FHA approved "U" values of walls, floors and ceilings to include both summer and winter insulation. "U" values, heat transfer coefficients of build-

WHERE ON EARTH



do these

BOILERS

Come from?

THIS second edition contains ratings and major specifications of boilers old and new. Complete, comprehensive. More than 5,000 boiler trade names. More than 250 makes. Handy size 8x11. More than 200 pages. **$3.**

●

HEATING PUBLISHERS, INC.
232 Madison Ave., New York, 16

He'll be a

BETTER SERVICEMAN

for Reading

BETTER OILHEATING

●

This new, enlarged edition is a practical book for servicemen to read at least once and also makes a good reference source for service problems. It's a compilation of articles thoughtfully selected from Fueloil & Oil Heat.

Bound in heavy paper covers. 8-1/2 by 11. There are 110 pages & nearly 140 illustrations as well as numbers of tables & short service hints. **$2**

Please send check with order to make it unnecessary for us to bother you with a billing.

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232 Madison Avenue **New York 16, N. Y.**

You'll Never Miss with KRESKY

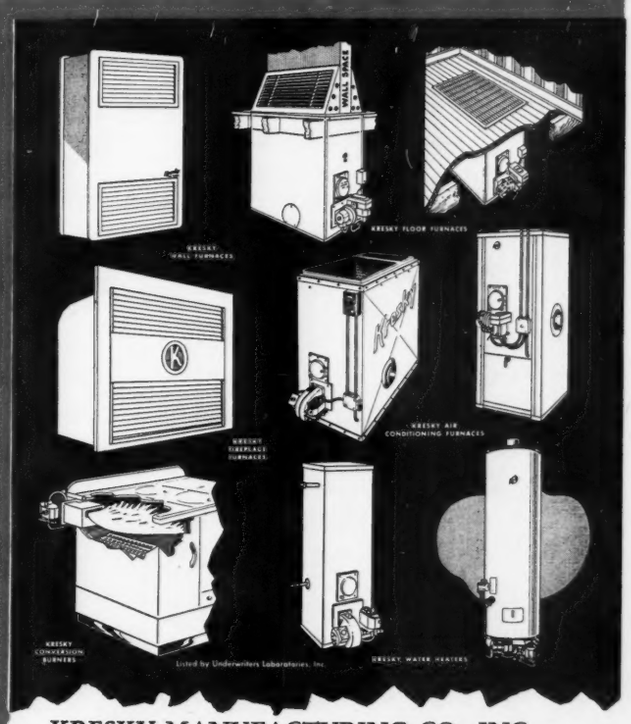
OIL HEATING EQUIPMENT

Because *Kresky,* and only *Kresky,* gives you a double-barreled sales weapon.

BARREL NO. 1 — A MODEL FOR EVERY NEED
There's a *Kresky* model for every need. Your prospects may have special problems, or be just plain finicky, but there's a *Kresky* model, type and size that will get you the sale.

BARREL NO. 2 — YOU CAN DEMONSTRATE KRESKY
You can actually demonstrate in a moment why the famous Kresky Forced Air Induction Oil Burner, the heart of all Kresky equipment, is superior.

Send Today For New Information on New Profits For You With KRESKY



KRESKY MANUFACTURING CO., INC.
100 H STREET, PETALUMA, CALIFORNIA
Please send me full information.

*Name*_____

*Address*_____

*City*_____ *State*_____

THE *KRESKY* LINE IS THE COMPLETE LINE

ing sections containing Silvercote surfaces, have been compiled by Warren Knudson, vice president of Silvercote, in accordance with FHA calculation procedure. Drawings showing two hundred and thirty-eight typical wall, floor and ceiling sections also illustrate proper position of the insulation to obtain stated values.

The calculations cover virtually all types of standard construction and a wide range of building materials and various combinations of reflective and convective insulation. Described in the handbook are six types of Silvercote heat reflective surfaces. Three of these are sheets, the others reflective blankets.

Duo-Therm Announces Personnel Appointments

THREE ANNOUNCEMENTS made recently by Duo-Therm Div., Motor Wheel Corp., Lansing, Mich., told of appointment of a district manager, assistant service manager and field research engineer.

Joseph H. Kennedy, named district manager for the New England territory, has been with Duo-Therm for the past twelve years, and advanced to the position of assistant service manager before this new appointment.

The other appointments saw T. R. Merrill, a Duo-Therm employee since 1923, become assistant service manager and Walter Thompson designated field research engineer.

Harper Oil Company Named Distributor for Tide Water

HARPER OIL CO., Long Island City, N. Y., has been named distributor in the New York area for Tydol, Veedol and other Tide Water Associated petroleum products. John Harper, president, Harper Oil Co., prominent in the business for the past eleven years, is a past president and director of Empire State Petroleum Association, API director and a member of its Marketing Division General Committee.

Skinner Company Completes Fifty Years' Operation

A FIFTY YEAR span of service has been completed by M. B. Skinner Co., South Bend, Ind., manufacturers of pipe repair clamps and allied products. Originally established in Chicago, the company has operated in South Bend since 1928 in a unique plant setting, which resembles a private estate. The company also was a pioneer in profit-sharing, beginning 1934 with a record of no strikes or work stoppages since its founding. Average length of service for Skinner employees is twelve years.

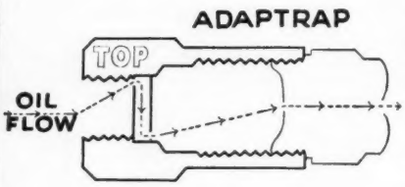
Harvey Names Additional Distributor Outlets

A TOTAL of fifty-two jobbers had been named as distributor outlets for Sid Harvey, Inc., Valley Stream, N. Y., by the end of 1948. An additional twenty-one outlets were named during December to distribute oilburner parts and repair services featured by Harvey.

In New York State: Orange County Plbg. Supply Co., Middletown; Ph. Granoff & Son, Inc., Brooklyn; Aetna Supply Co., New York City; Mineola Plbg. Supply Co., Mineola; Wallwork Bros., Inc., Avon; Treher & Jung, Gloversville; Richard Supply Co., Inc., Floral Park; George F. Ladd, New York City; H. B. Kimmey, Albany; Industrial Pipe & Supply Co., Jamestown;

FOR BETTER OIL BURNER PERFORMANCE

DELAVAN ADAPTRAP



A combination adapter and trap that gets all of the air out of the oil tube quickly. No moving parts. Prevents erratic spray, flame flutter and after drip due to air. Illustration shows oil flow.

DELAVAN SLUDGE SOLVENT

A powerful new solvent that is GUARANTEED to keep tanks, lines, strainers and nozzles free of sludge. Nontoxic; can't harm metal parts. Cuts down service problems and makes you a nice profit.

by the makers of
DELAVAN
Balloffet Design
OIL BURNER
NOZZLES

DELAVAN
ENGINEERING CO.
Established 1937
DES MOINES 9, IOWA

OHI

From Any Angle...they're really *"Year's Ahead"*

BURN No. 3 OIL

EASIER TO SERVICE

ENTIRELY NEW

MONCRIEF'S *NEW LINE OF* PRESSURE VAPORIZING OIL FIRED UNITS

Moncrief's entirely new, Pressure Vaporizing Units are now ready in plenty of time to supply the demand for modern, yet low-priced heating equipment in 1949 houses and housing units.

The superior pressure vaporizing burner has been approved by Underwriters Laboratories to burn No. 3 fuel oil, as well as the lighter domestic grades. Factory assembled and factory adjusted, it is supplied ready to be inserted in the combustion chamber in a matter of a few minutes. Through the use of an ingenious mounting plate, it is not only installed, speedily, but it is installed correctly, also. Removal of the burner for servicing or inspection is as simple as installing it.

This good looking unit with its baked enamel cabinet of modern design with attractively rounded corners is supplied assembled, ready for the oil burner to be installed.

One of its most valuable features is the rugged, long lived heating element of No. 14 gauge steel construction.

For high quality and low cost, it's Moncrief in 1949! Send for literature. See your Moncrief jobber.

It's a matter of minutes to install or remove the complete Moncrief oil burner.

76,000 Btu Output
No. VL-65 Air Conditioning Unit

75,100 Btu Output
No. VU-75 Utility Unit

71,200 Btu Output
No. VW-61 Gravity Furnace

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

fueloil & oil heat

Roth Plbg. & Htg. Supplies, Spring Valley.

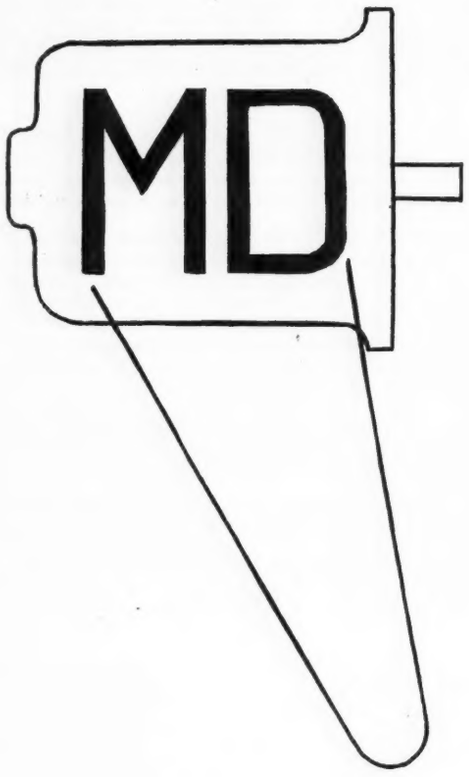
Others: Sims Corp., Providence, R. I.; Petroleum Pipe & Supply Co., Pittsburgh and Fuel Savers, Inc., Harrisburg, Pa.; Henry V. Dick & Co., Inc., Charlotte, N. C.; Seashore Supply Co., Atlantic City, N. J.; Refrigeration & Industrial Supply Co. and Vincent Grass & Copper Co., Inc., both Minneapolis, Minn.; Pelton Distributing Co., Detroit, Mich.; Favret Furnace Supply Co., Columbus, Ohio and Canney-Plue, Inc., Rutland, Vt.

Shell Makes Changes Among Marketing Executives

A SERIES of changes among its marketing executives has been announced by Shell Oil Co., Inc., New York 20, N. Y. Robert S. Mitchell has been named manager of the St. Louis marketing division, succeeding John W. Pegg, now New York office manager, Shell Development Co., research affiliate. Also, J. H. Hall, formerly manager, marketing engineering department, has become assistant to the marketing vice president, handling coast-to-coast special assignments.

Other changes saw Dr. R. T. Goodwin, formerly manager, aviation department, succeed Mr. Mitchell as head of special products and J. S. Harris named Dr. Goodwin's successor.

Shell also announced three recent shifts among its district managers. A. P. Kaif, district manager at Trenton, N. J., has been promoted to state representative for Maine and Gilbert S. Maxson, district manager at Inwood, N. Y., has advanced to sales manager, Minneapolis division. The third change saw Howard D. Vandenburgh, district manager, Manhattan, N. Y., transfer to become district manager at Chicago.



OIL BURNER MOTORS

DESIGNED FOR OIL BURNER USE

Sturdy but light MD motors give most efficient performance.

MD motors have no switch trouble.

MD motors reduce service calls.

MD motors guarantee dependability.

Inquire for Prices on Quantity Orders.

ELECTRIC MOTOR DEVELOPMENT COMPANY

WICKLIFFE, OHIO

Discuss Longer Pump Life In International Nickel Booklet

SELECTION of materials for construction of pumps and pump parts is important to the life of such units, it is explained in a booklet being offered by International Nickel Co., Inc., New York 5, N. Y.

"How to get longer service from your pumps" contains eight illustrated pages in which are discussed the four factors that affect pump life and performance. Corrosion, corrosion - fatigue, erosion and wear are the factors covered, with case histories cited to illustrate specific instances.

Saval Expansion Program To Double Production

AN EXPANSION PROGRAM now being conducted by Saval, Inc., Los Angeles, Calif., will double its capacity to produce Shear-Seal control valves. Two new buildings are under construction and new equipment and personnel are being added.

The program has been launched to keep pace with the increased volume of orders received, with a substantial portion of the increase registered for industrial valves for water, air and oil service.

Minneapolis-Honeywell Acquires Assets of H. Belfield Company

AN AGREEMENT to acquire assets of H. Belfield Co., Philadelphia has been entered into by Minneapolis-Honeywell Regulator Co., Minneapolis 6, Minn. Harold W. Sweatt, Honeywell president, reveals that Howard L. Murry, Belfield president, will be elected a vice

IT'S EASY TO SAY "YES"
when you've got a complete line . .

. . . and you have with MOR-SUN

MOR-SUN
PRESSED STEEL FURNACES

"The Sun Never Sets with MOR-SUN"

MORRISON
STEEL PRODUCTS, INC.
BUFFALO 7, N. Y.

It doesn't make any difference whether it's an efficiency home or a custom-tailored house, MOR-SUN dealers have a modern factory-assembled, factory-packaged, die-pressed steel MOR-SUN winter air conditioner to fit! And it doesn't make any difference whether there's installation room in a space-saving closet or a spacious rumpus-roomed basement!

MOR-SUN dealers now have (in production or in process of tooling) the perfect combination of BEAUTY AND BTU'S to produce indoor comfort — a mass-precision, mass-produced, mass-priced forced warm air furnace!

That's why it's easy to say YES — that's why it's so easy to sell!

That's why MOR-SUN is the buy-word in furnaces from coast to coast!

president of Minneapolis-Honeywell and be in charge of the new acquisition, to be called the Belfield Valve Div., Minneapolis-Honeywell Regulator Co.

Products of the division will be distributed nationally through Honeywell branch offices and will permit the company to supply its own regulating valves for industrial controlling instruments used in chemical, metal and petroleum manufacture. The valves also are to be supplied with the company's heating and air conditioning automatic control systems. Belfield, founded in 1836, is a recognized manufacturer of regulating valves associated with thermostatically-operated and other types of automatic control systems.

Add 61 Million Gallons To Socony-Vacuum Storage

A STORAGE-TANK construction program, recently completed by Socony-Vacuum Oil Co., Inc., New York 4, N. Y., has added a total capacity of more than 61 million gallons. Construction of new tanks started last Spring, along with a refinery expansion program and construction of new pipelines in Pennsylvania, Maine, central New York and from Corsicana, Tex. to Patoka, Ill. Seven new super tankers for ocean transport of petroleum products also are under construction.

Construction of additional storage facilities, rushed to completion to meet increased demand for home heating fuel and other products, was accomplished in twenty-five cities in New York state, New England and other parts of northeastern United States. Among the cities in which new tanks have been built are: Burlington, Rutland and St. Johnsbury, Vt.; Newburgh, Fort Edward, Ogdensburg, Sidney, Port Jefferson, Staten Island, Catskill, Sacket Harbor, Plattsburg, Massena, Westport, Utica and Amsterdam, N. Y.; Quincy and Worcester, Mass.; Portland and Auburn, Me.; West Brownsville and McKees Rocks, Pa.; Atlantic City, N. J. and New Haven, Conn.

Stow Bulletin Shows Pump Drive Installations

A BULLETIN, showing flexible shaft tank pump drive installations, has been announced by Stow Mfg. Co., Binghamton, N. Y. Designed for use of tank truck operators, the catalog details such information as how to mount shaft for any pump location, determine shaft capacity, measure for length and layouts for new or conversion jobs. Tank trucks and tractor semi-trailers both are covered in bulletin 483.

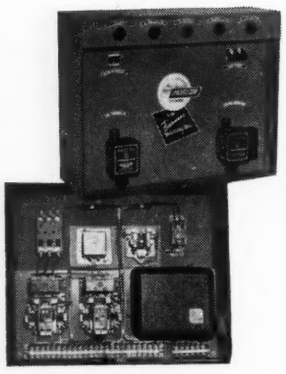
◈

EMERSON ELECTRIC MFG. CO., St. Louis 12, Mo., describes a new 1/6 hp oilburner motor in a 4-page bulletin. Design, operation and construction features, dimensions and NEMA performance standards are covered, along with the "inside story" of the motor, accompanied by an exploded view of comfolder on capacitor-start motors.

FEDERAL BOILER CO., Midland Park, N. J., has prepared a gate fold bulletin No. 125 on models FC and FD steel heating boilers. Cut-a-way views are employed to illustrate interior construction, with features of each series individually pictured in small close-up photographs. Dimensional drawings are coupled with ratings and specifications tables.

The Perfect Oil-Burning Equipment Combination

ACE PANEL BOARD

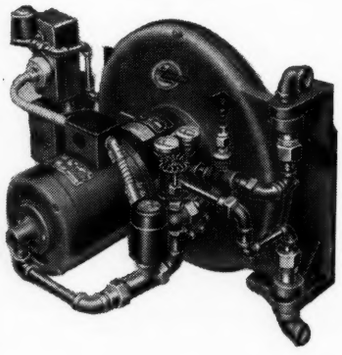


The new all-steel Ace control panel permits rapid and efficient installation of oil burners.

It is pre-wired at the factory so that it is only necessary to supply the power and make connections on location. Wires are color-coded for ease in circuit tracing. Pilot lights indicate if burner is operating as desired.

The prefabricated panel has a number of other features that make it outstanding.

ACE Uniflow OIL BURNER



Ace burners are custom made for particular heating requirements, assuring dependable, economical, efficient applications in the commercial and industrial field.

The patented Ace Uniflow Valve permits a constant, uniform flow and flame regardless of changes in oil temperature or viscosity. The correct proportioning never varies.

Capacity Ranges

	Gallons Per Hour	Boiler H.P.	Square Feet Steam Rad.	Square Feet Water Rad.
Minimum	4	12	1,600	2,600
Maximum	165	500	64,000	104,000

SEND FOR ACE MANUAL

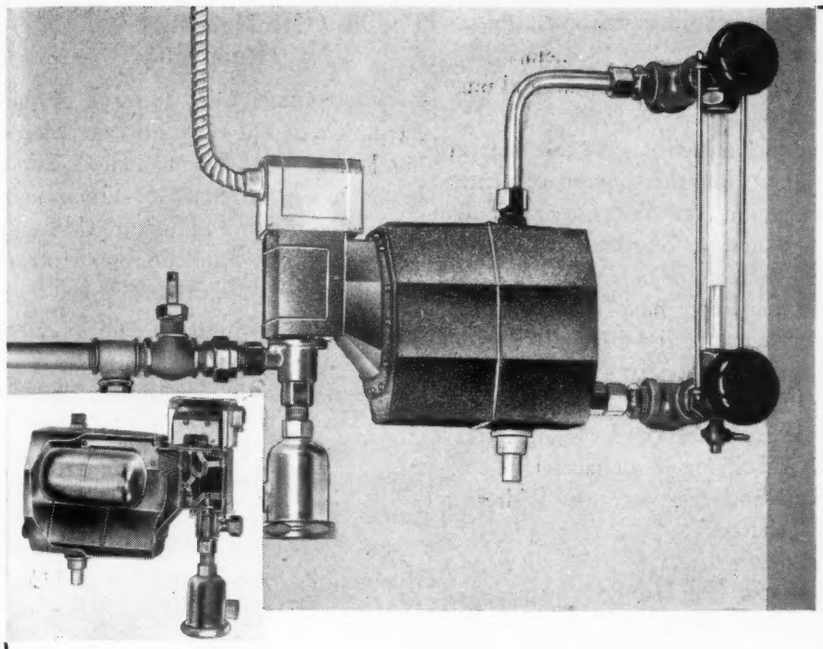
A special manual for architects and engineers is now available. Send for your copy today.

Ace UNIFLOW OIL BURNERS

ACE ENGINEERING CO.

1435 W. 15th Street • Chicago, Illinois

Custom Engineered Oil Burning Systems Since 1931



No. 577 Water-Boy Feeder and Low Water Cut-Off

The No. 577 Water-Boy Combination Feeder and Low Water Cut-Off is a compact and streamlined unit weighing only 5 pounds. It is designed for automatically-fired low pressure steam boilers up to 5000 sq ft. capacity carrying 25 lbs. maximum steam pressure. Switch rating ¾ h.p. 110 v. A.C. and 1½ h.p. 220 v. A.C. circuit. The blow-off valve is of the built-in type. The piping to and from the feeder can be carried in any direction desired The strainer has 10 sq. inches of screen area.

No. 567 Water-Boy Feeder Only

The No. 567 Water-Boy is the same in every respect as the No. 577 except that low water cut-off switch, box and levers are omitted but can be added later. The No. 567 comes complete with quick hook-up fittings, strainer and blow-off valve.

No. 568 Water-Boy Feeder and Low Water Signal

The No. 568 Water-Boy is the same in every detail as specified for the No. 577 except it is also equipped with a signal light mounted on the top of the switch box cover. A warning bell may also be attached to switch.

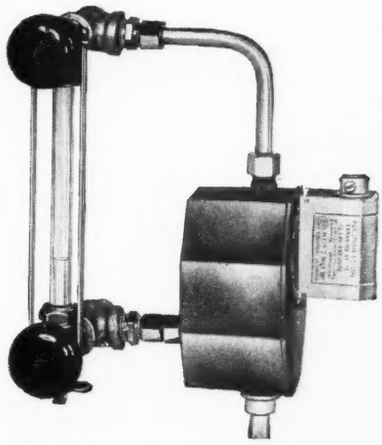
MAID-O'-MIST *ACCENTS* SAFETY With New Boiler Water Line Controls

Plus these 6 EXTRAS

MODERN APPEARANCE • LOW COST

- **No corrosion—use of non-ferrous metals throughout eliminates normal corrosion.**
- **Easy to Install—furnished with brass quick hook-up fittings and copper tube connections.**
- **Easily Cleaned—built-in quick opening blow-off valve of large capacity.**
- **Simple to Repair—easy access to all working parts for repair if necessary.**

The new 500 Series of boiler water-line controls (available in four combinations) mark a new departure in design, safety and construction. Only after considerable research and experience in the field can we say they give more satisfactory service per dollar of investment than can be purchased elsewhere. Only one of the many features is the new switch, used as a circuit breaker in the low water cut-off. It carries the seal of the Underwriters Laboratories and the Hydro-Electric Power Commission of Ontario. The rapid snap action of the contacts, the generous use of silver (to dissipate heat), and the size of the switch gap, all make it possible to break large currents without pitting or sticking.



← No. 587 Boilergard

The Maid-O'-Mist No. 587 Boilergard Low Water Cut-Off is designed for automatically - fired low pressure steam boilers carrying up to a maximum steam pressure of 25 lbs. and for motors of ¾ h.p. 110 v. A.C. and 1½ h.p. 220 v. A.C. current. The No. 587 comes complete as illustrated with quick hook-up fittings less water gauge glass. The blow-off valve is built-in.

No. 857 Water-Boy Feeder

The Maid-O'-Mist No. 857 Water-Boy Feeder built entirely of non-ferrous metals is designed for low pressure steam boilers carrying up to 15 lb. steam pressure. The unit comes complete with quick hook-up fittings for feeding through gauge glass opening, making an inexpensive installation.

STOP WATCHING THE WATER LINE

. . . Use Maid-O'-Mist Water Boy Controls for Safer Boiler Protection

We cannot give you an adequate word picture of the important depelopments incorporated in these new controls. You must see them —try them. Send for catalog No. 500A now.

MAID-O-MIST Inc.
HEATING SPECIALTIES

AUTOMATIC HUMIDIFIERS . . . . . AUTO-VENTS
WATER LINE CONTROLS . HEATING SPECIALTIES

MAID-O'-MIST, Inc.

3217 NORTH PULASKI ROAD . CHICAGO 41, ILL.

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 20th.

Spiess Contacting OHI Chapters West of Chicago

W. O. SPIESS, national secretary, Distribution Division, Oil-Heat Institute of America, Inc., New York 16, N. Y., left late in February for a trip that took him on visits to all HI chapters west of Chicago.

First stop was at Milwaukee and the Wisconsin Oil Heat Association's annual rally and then to St. Louis and Kansas City. Mr. Spiess also appeared as a speaker at the Pacific Coast OHI Conference in Portland, Ore., March 5 and returned east by way of Minneapolis, where a larger association is being planned to cover the entire Twin City region. Meetings in Omaha, Des Moines and Chicago also were arranged to round out the fifteen day trip.

Three Speakers Talk About Service At MOHA Meeting

THREE SPEAKERS, Gus Dwelley, Automatic Heating Corp., Jim DeWolfe, General Heat & Appliance Co., and Jack Isgar, Marble Heat Corp., appeared at the 160th meeting of the Massachusetts Oil Heating Association, Inc., Watertown 72, Mass., held February 15 at the Fox and Hounds Club.

Representing a combined total of fifty years experience in the oilburner business, the three speakers dealt with different aspects of the same subject, explaining "How to operate a more profitable service department." Members of the Independent Oil Men's Association and Oil Heat Institute of New England were invited to attend.

NYOHA 1949 Directory Divided into Five Sections

THE 1949 DIRECTORY and Buyers' Guide, published by New York Oil Heating Association, Inc., Long Island City 1, N. Y., consists of five sections devoted to information on association activities, helpful data, and advertisements of oil-heating organizations. The initial section among other lists contains a membership roster of NYOHA membership and an explanation of the aims and purposes of the group.

Section 2 reproduces the text of local and other laws that govern oilburner installation in New York City and adds to this a number of pages of technical data of value to the oil and burner dealer. Section 3 consists of advertisements of manufacturers and distributors of oil heating and accessory equipment and fueloil firms. Sections 4 and 5 are devoted to a wholesale and a retail buyers' guide, embodying an alphabetical list of products and the name and addresses of local sources.

Wisconsin Oil Heat Group Holds Sixth Industry Rally

THE SIXTH ANNUAL industry rally and dinner, sponsored by the Wisconsin Oil-Heat Association, Inc., OHI Chapter in Milwaukee, Wis., was held in the Circus Room, Hotel Wisconsin on February 25. The meeting was open to all fueloil, oilburner, accessory and allied dealers in the state and was highlighted by an address by T. A. Crawford, general manager, Timken Silent Automatic Div., Timken-Detroit Axle Co., Jackson, Mich. Drawing on his long oilburner sales experience, Mr. Crawford discussed the return to the buyers' market and impressed on the gathering the importance and soundness of his subject, "Let's Get Back to Selling."

A cocktail party, dinner and entertainment rounded out the program.

Truck and Trailer Tank Institute Names Officers

AT ITS ANNUAL MEETING, held February 8 and 9 in Chicago, the National Truck Tank and Trailer Tank Institute, Chicago 3, Ill., elected the following officers to serve during 1949: President, L. S. Burke, Boston Steel & Mfg. Co., Malden, Mass.; vice president, H. D. Marshall, Eaton Metal Products Co., Omaha, Neb.; treasurer, L. R. Wood, Niles Steel Tank Co., Niles, Mich.

In addition to the above officers, the following became members of the executive committee: R. L. Blodgett, Pennsylvania Furnace & Iron Co., Warren, Pa., and T. A. Burress, The Heil Co., Milwaukee, Wis. Allan R. Smith was reappointed executive secretary.

Pacific OHI Meeting Hear Four Speakers

FOUR SPEAKERS were featured at the Pacific Coast Oil Heat Institute Meeting, held in the Multnomah Hotel, Portland, Oregon on March 5. Sponsored by Oregon Heating Industries, Portland 4, Oregon, in conjunction with other OHI chapters in Seattle, Wash. and San Francisco, Calif., the meeting was open to all members of the industry.

Speakers at the afternoon meeting were Thad Vreeland, manager, Fueloil Sales, General Petroleum Corp., Los Angeles, Cal.; Ben Hazen, president, Benjamin Franklin Federal Savings & Loan Association, Portland; George Hochstein, sales manager, The Heil Co., Milwaukee, Wis. and W. O. Spiess, national secretary, Distribution Division, Oil-Heat Institute of America, Inc., New York 16, N. Y.

Headquarters for the occasion were established in the hotel's Colonial Room where displays were on view March 4 and 5. The meeting was closed by a cocktail hour and dinner. Charles R. "Chuck" Holloway, Jr., Liberty Fuel & Ice Co., Portland, acted as master of ceremonies.

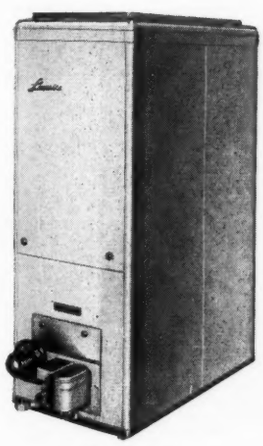
API Marketing Division Plans St. Louis Meeting

THE MID-YEAR MEETING, Division of Marketing, American Petroleum Institute, New York 20, N. Y., will be held May 9 and 10 in the Jefferson Hotel, St. Louis, Mo. Names of speakers who will appear are to be announced later, but a list of subjects to be covered includes such topics as the relationship of industry and government, wholesale marketing problems and special features of retail marketing.

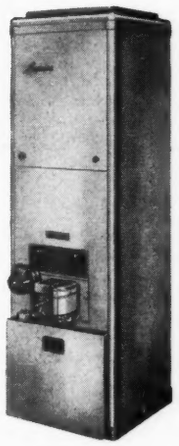
Midwest Power Conference Announced for April 18-20

A THREE DAY Midwest Power Conference will be held in Chicago, April 18, 19 and 20, according to an announcement received from the Illinois Institute of Technology. The Conference was reorganized in 1938 as a cooperative institution with university and technical society associations, the major responsibility and sponsorship centered in the Institute. Headquarters for the Conference will be located in the Hotel Sher-

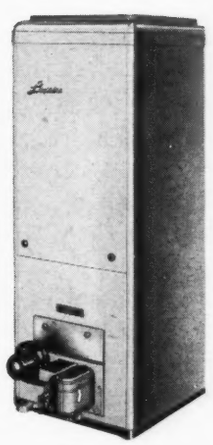
ANNOUNCING! THE NEW Luxaire PRESSURE Vaporizing Oil Fired Units



No. VA-65
Air Conditioning Unit,
75,100 Btu Output



No. VH-75
Utility Unit,
75,100 Btu Output



No. VG-61
Gravity Furnace,
69,000 Btu Output

Completely new

Competitively priced

Burn No. 3 fuel oil

Tightening 4 screws, speedily mounts the completely assembled, factory adjusted burner in its correct position in the furnace.

• The new 1949 line of Luxaire Pressure Vaporizing Oil Units are now ready! Ready for 1949 housing projects which are seeking automatic heating! Seeking good looking, high quality heating Units! Seeking low prices for the 1949 scale of housing costs! These sturdy units have heating elements of heavy No. 14 gauge steel. They have handsome cabinets, with gracefully rounded corners, attractively finished in baked enamel.

The unit itself is shipped assembled, to reduce installation costs, ready to have the burner installed.

The advanced Pressure Vaporizing burner is factory assembled and adjusted. It is quickly and easily installed in the unit, in its exact, correct position, by fastening it to the combustion chamber with 4 screws. For inspection or servicing, loosening the same 4 screws makes it possible to remove the oil burner bodily. Approved by Underwriters' Laboratories to burn No. 3 fuel oil, it will give clean and efficient combustion with the lighter oils, as well.

See your Luxaire jobber for complete information.

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

Fueloil & oil heat

man and there the numerous meetings, luncheons and "All-Engineers" dinner will be held.

Among papers to be presented at the sessions are: "Design of small industrial power plants," "Preventive maintenance program for small plants," "Transmission of heat by a fluid carrier," "Room air distribution in year round air conditioning," "Maintenance of package boilers" by F. W. Hainer, Cleaver-Brooks Co., "Controlling the heat pump" by F. R. Ellenberger, Air Conditioning Dept., General Electric.

New England OHI Announces Plans For Annual Convention

MARCH 25 has been selected as the date for the Annual Convention of the Oil Heat Institute of New England, Boston 15, Mass., according to an announcement released by Fred N. Beckwith, executive secretary. The meeting, which will be held in Boston's Hotel Statler, opens with a morning annual meeting of the Institute, followed by a meeting of its board of directors and the annual industry luncheon.

After the luncheon a Round Table Discussion will be held, with a panel of speakers discussing pertinent industry problems. Robert Gray, business manager, FUELOIL & OIL HEAT, will be moderator of the forum. The annual banquet, commencing at 7:00 P.M., is to be the final event of the one day convention.

Oil Heat Old Timers Gather At Luncheon Meeting

THIRTY members and officers attended a luncheon meeting of the Oil Heat Old Timers, Inc., Long Island City, N. Y., held February 12 at the Old Brewhause, New York City. In the absence of President Tony Sbare, due to illness in his family, Vice President Albert Zeamans, presided. A nominating committee, named to select the 1949-50 directors, is headed by R. Vincent Perotto, with Albert W. Evans, Joseph A. Ross and Dan Bierman, members.

Plans were discussed and a program adopted for the club's annual meeting to be held April 21 and for its annual dinner-dance, May 7. Vince Perotto is chairman of the dinner-dance committee, Dan Bierman heads the entertainment committee for both affairs. The dinner-dance is open to members and their guests. Further information is available from OHOT, Long Island City 1, N. Y.

Graduate Burner Class From OHI Maryland School

FOURTEEN students were honored February 8 upon their graduation from the oilburner course given at the Public Vocation School, Baltimore. The courses are operated under the joint sponsorship of the Department of Education and the Oil Heat Association of Maryland, OHI chapter in Baltimore, Md.

The group, the first class to be graduated from the school, were feted at a banquet in the Hotel Stafford and each received his diploma and a special Oil Heat Association award. In addition, the fourteen received assignments as service men with local heating companies.

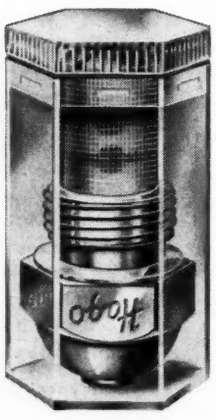
Convector Manufacturers Elect Slate of Officers

E. A. CLINE, The Trane Co., LaCrosse, Wis., was named president at the an-

EXCLUSIVE!

NEW! SNAPON LIDS! EASY TO STACK!

Hago



DUSTPROOF! CLEARSITE PLASTIC! HEXAGON SHAPED!

A SUPERIOR CONTAINER FOR A SUPERIOR NOZZLE

HAGO PRODUCTS • 1281 Springfield Ave., Irvington, N. J.

Here's where SMOKE tells a story

● Just as the tell-tale smudge of smoke on a distant horizon indicates possible trouble to the forest ranger . . . smoke in flue gases spells incomplete combustion and lowered economy in oil burner operation.

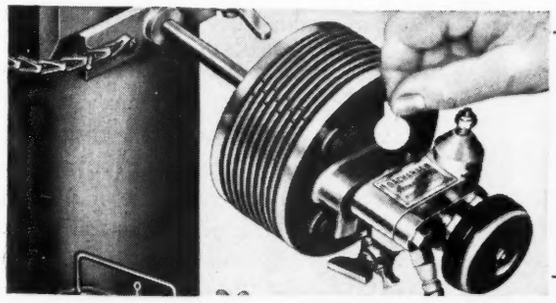
To meet the industry-wide need for a practical device to register the soot content of flue gases in actual operation, Shell engineers developed the Shell Smoke Test* . . . the first simple, accurate means for making direct comparison checks on combustion efficiency.

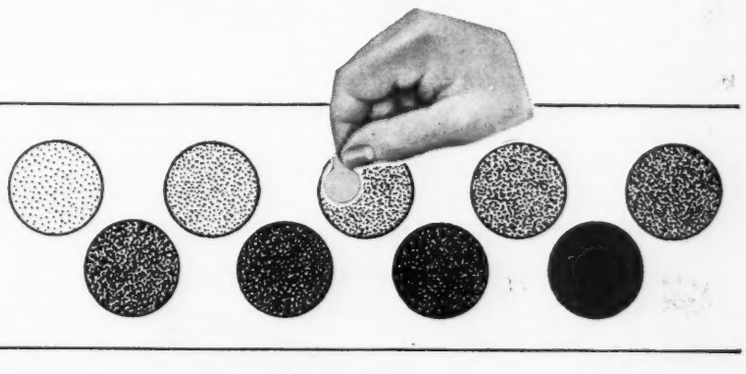
For over 20 years, Shell Fuel Oil research has contributed one substantial improvement after another to the Oil Heat industry.

As one of the first steps, Shell took the lead in setting up standards for better fuel oil quality.

More recently, the Shell-developed Combustion Head has shown the way to impressive gains in oil burner efficiency.

Here is tangible evidence of Shell's policy of "Better Oil Heat"—a program designed to aid consumer, dealer and manufacturer alike.





***An instrument for conducting the Shell Smoke Test is manufactured by Bacharach Industrial Instrument Company, Pittsburgh, Pa. The Instrument is compact and easy to use. A vacuum pump draws a measured sample of flue gas directly from the flue pipe . . . passes it through a small disc of filter paper. Soot is deposited on the disc in direct proportion to the smokiness of the flame.**

Comparison of the discoloration on the test disc with the shadings on a standardized chart (see above) affords a quick and accurate check on burner efficiency.

SHELL

SHELL FUEL OIL

fuel oil & oil heat

nual meeting of the Convector Manufacturers Association, Chicago 1, Ill., a group composed of manufacturers of non-ferrous convector radiators.

Louis D. Mandell, C. A. Dunham Co., was named vice president; J. H. Smart, Tuttle and Bailey, Inc., New Britain, Conn., secretary.

ASME Hears Talk On De-Scaling Fouled Tubes

AT ITS ANNUAL MEETING members of the American Society of Mechanical Engineers, New York 18, N. Y., heard a talk by A. John, Thomas C. Wilson, Inc., Long Island City, N. Y., discussing on-the-spot de-scaling of fouled heat exchanger tubes with mechanical cleaners. In his report, Mr. John emphasized the effectiveness of the cleaners where tubes are badly fouled or plugged and pointed out that either air, water or steam can be used as the scavenging agent. Applications of both heavy and light-duty cleaners were cited.

Data was included on electrically driven flexible shaft tube cleaners for use where compressed air is not available, on clean-outs of return bend types and the use of turbine type cleaners. Copies of the paper are available from the Wilson company.

Westchester Trades Hold Annual "Cruise"

THE ANNUAL "CRUISE," sponsored by Westchester Oil Trade Association was held on February 19 at New York's Hotel Astor. The dinner-dance, officially called the "Cruise," takes it name to honor the first annual affair of the Association. After its first year of operation, the group sponsored an anniversary cruise and all annual events have been so named ever since.

◈

Peter Guarnar has been placed in charge of an eastern sales office, located at Farmingdale, N. Y., established by Davisbilt Products Co., Cincinnati, Ohio. The office was established to facilitate handling of inquiries and to improve service. Eastern sales of all equipment will be handled through the Farmingdale office, with all manufacturing and engineering continuing at the Cincinnati plant.

William J. Mahoney and *Alden C. Hewett* were named executive vice president and treasurer, respectively, American Coal Co., Hartford, Conn., according to a recent announcement. Mr. Mahoney, a registered industrial engineer with twenty years fuel and heating service experience, advances from his former position of general sales manager. Mr. Hewett has been with the firm since 1939 and recently functioned as assistant treasurer.

Paul H. Dow has joined Temperature Equipment Corp., Airtemp dealer in Cleveland, Ohio, as sales manager. He will have charge of sales activities of the company for the entire line of Airtemp heating and air conditioning equipment. Mr. Dow's previous associations were with General Electric Co., Nela Park, and Kelvinator Div., Nash-Kelvinator.

Samuel G. Trainor has assumed the duties of sales manager, Massachusetts Heating Corp., Cambridge 42, Mass. At Massachusetts Heating Mr. Trainor will concentrate on sales of York-Heat rotary oilburners and Steam-Pak generators.

Readers' Forum

L. H. PRENTICE COMPANY
Chicago

Editor:

We have just received a copy of the second edition of your Beacon Boiler Reference Book.

On page 4 there is a paragraph reading as follows:

"When no ratings are shown an approximation can be obtained by allowing 14 sq. ft. of equivalent steam radiation for each sq. ft. of chimney load."

We would appreciate receiving information on what you mean by chimney load and how it is to be determined.

H. M. HART

The inclusion of the words "sq. ft. of chimney load" in the above paragraph was, of course, a typographical error and reference should have been to "sq. ft. of heating surface."

Future copies distributed will be corrected and it is suggested that those who already have received their copies of the Beacon Boiler Reference Book make their own corrections on page 4.

◈

Heating and Ventilating's 1949 Buyers' Directory

THE 1949 EDITION of the Heating and Ventilating Buyers' Directory is a 356 page, 5⅝" x 8⅛" volume covering the fields of air conditioning, piping, heating, refrigeration, ventilation, air sanitation. It is primarily a product directory, listing the names of manufacturers or sources of supply of equipment, supplies and services. A new section this year lists local sales representatives and branch offices of manufacturers.

A trade name section includes both current and obsolete trade names together with the product with which it is associated and the manufacturer.

Published by The Industrial Press, New York 13, N. Y., the Buyers' Directory sells for $1.00.

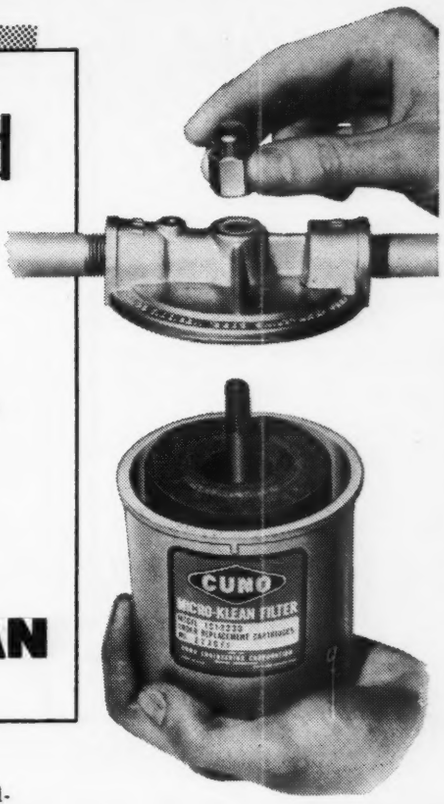
◈

C. H. Padgett, Auburn, Ill., who has been Wheeling's representative in southern Illinois, on January 10 became sales manager, Wheeling Furnace Co., Martins Ferry, Ohio. He has enjoyed more than twenty-five years experience in distributing, manufacturing and merchandising heating equipment.

"60-Second Service"

MAKES YOU MORE MONEY SELLING

CUNO MICRO-KLEAN



Nothing could be simpler than installing a Cuno MICRO-KLEAN Oil Burner Filter—or replacing a MICRO-KLEAN cartridge.

One model handles all domestic burner installations and the straight line pipe connections save time and work. Also—

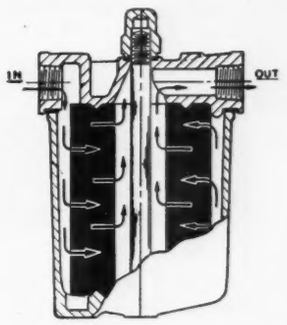
It takes only 60 seconds to remove an old cartridge and insert a new one. Turning a single nut permits removing the housing cover.

Only One Size to Carry

Universal application of a single model saves inventory cost and shelf space, and eliminates lugging several sizes to the job.

FOR FREE BULLETIN, ATTACH COUPON TO YOUR LETTERHEAD

● **Cuno MICRO-KLEAN Filters and replaceable cartridges are manufactured by the company whose filters are used more often in industry than any other brand.**



● **User Satisfaction—"Graded Density in Depth" of micronic-fibre cartridge plus resinous impregnation doubles dirt-collecting capacity, eliminates channeling.**

CUNO

OIL BURNER FILTERS

Easier to Stock . . .
Easier to Install

Cuno Engineering Corporation
855 South Vine St., Meriden, Conn.

Please send information on Cuno MICRO-KLEAN Oil Burner Filters and replacement cartridges.

Name.....

Title.....

Company.....

Address.....

New Products

Four Inch Stove Pipe Ducts Feature G-E Air-Wall Heating

AIR-WALL HEATING, developed by General Electric Co., Air Conditioning Dept., Bloomfield, N. J., features the use of 4" round stove pipes instead of conventional rectangular ducts, and distributes heated air through special registers and grilles upward in a fanlike pattern to blanket cold outer walls. By warming the wall, it is explained, the sensation of radiant heat is created. Improved circulation of air within the room reduces the tendency of warm air to cling to the ceiling and raises floor temperatures.

Air-Wall can be used with gas or oil-fired G-E forced warm air furnaces, standard pipes and elbows, plus factory built register boxes and grilles constituting a package heating system sent as a unit. The prefabricated ducts and elbows are assembled readily, with a large saving in installation cost and time cited as advantages. In the system, approximately 30% less air is circulated, but air is supplied at somewhat higher temperatures for mixing with room air.

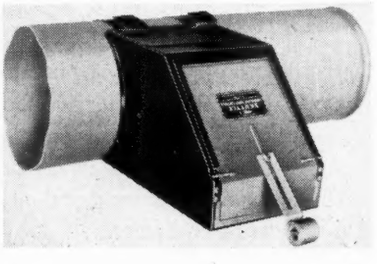
Air-Wall register being fitted to register box on cut-a-way model of typical home installation.

The small stovepipe ducts dampen furnace noises and register louvres, located near baseboards, are designed to diffuse air silently. "Whistling" when closed is prevented, says the announcement, by a positive shut-off on the register, which can be adjusted to suit individual needs in each room without disturbing the system's balance. Since air distribution is upward, and a few inches in front of the grille no air movement can be detected, furniture may be placed directly in front of the register without interfering with air circulation.

Skuttle Type F Draft Control Completes Windmaster Line

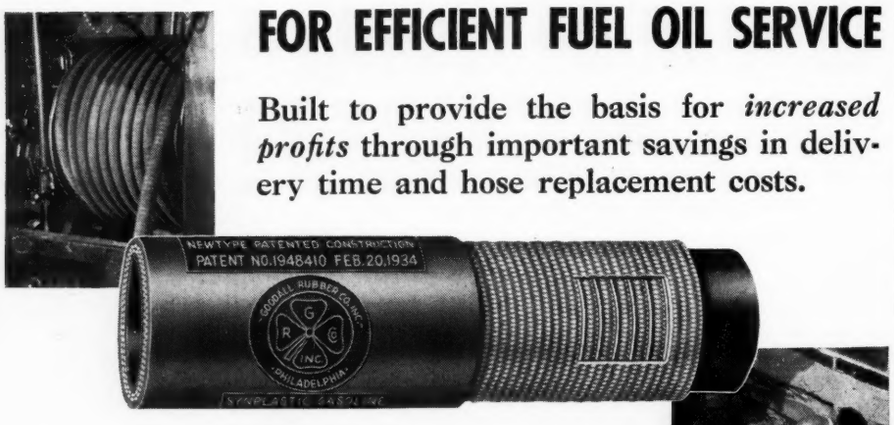
ADDITION to its line of Type F Windmaster, announced by Skuttle Mfg. Co., Detroit 7, Mich., completes its line of barometric draft controls. Made in furnace sizes, Type F achieves uniform and effective draft regulation with a larger effective vane area. Vane is mounted at an angle to obtain full opening with rotation considerably less than 90 degrees. The control's square housing provides larger openings to the chimney.

Bearings used on the Type F are designed for efficient radial and thrust load



"NEWTYPE CORD"
THE Six-Feature HOSE
FOR EFFICIENT FUEL OIL SERVICE

Built to provide the basis for *increased profits* through important savings in delivery time and hose replacement costs.



1—Non-flattening, kinkproof construction . . . always *round*, on or off the reel.

2—Oilproof tube . . . no swelling and consequent reduction of original I.D.

3—*Always* a full capacity flow through entire length of hose.

4—Tougher, longer-wearing brown cover gives complete protection to entire hose.

5—Quicker, time- and money-saving deliveries.

6—*Longer* hose life . . . *lower* hose costs.

Get *all* the facts about "Newtype Cord," now. Contact our nearest branch, or send for new illustrated folder.

GOODALL RUBBER COMPANY
GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.
Branches: Philadelphia • New York • Boston • Pittsburgh • Chicago • St. Paul • Los Angeles
San Francisco • Seattle • Salt Lake City • Houston • Distributors in Other Principal Cities
Est. 1870

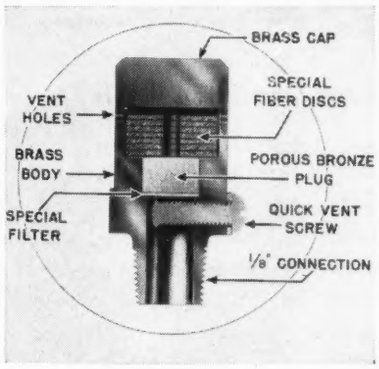
to afford free vane operation at any angle up to 45 degrees. It is rarely necessary to install the control at a greater angle, but where such conditions exist, rotation of the control in the boot restores it to less than a 45 degree angle.

Three Point Pipe Gage Measures Up To 12 In. Dia.

A PIPE GAGE, manufactured by Three Point Industries, Chicago 13, Ill., furnishes pipe sizes for all sizes from 1/8" to 12", sizes of electrical conduit and thin-wall tubing and correct drill sizes for tappings. Constructed of steel, finished in a black rust proof finish, numerals are deep etched and filled with white enamel. By placing fixed double contacts on the lower plate of the gage against the outer contour of the pipe to be measured, correct size can be determined by turning the movable section until its single contact touches the pipe. Sizes then are read from the tables on the front of the gage. Gage itself, when closed, measures 2 3/4" x 4 1/2".

Taco-Vent Automatic Hot Water Air Valve

AN AUTOMATIC hot water air valve, the Taco-Vent, announced by Taco Heaters, Inc., Providence 3, R. I., is recommended for use on radiators, baseboards, convectors, or as a vent for high points



on hot water heating systems. Taco-Vents have been under development for two and a half years and a number have been in use for a full year. Accelerated tests, according to the manufacturer, indicate a life of 25 years.

The valve consists of a brass body, with vent holes, a special filter, porous bronze plug, special fiber discs and a brass cap. Air passes through the filter, porous plug, fiber discs and vent holes to the atmosphere. Water, following the air, is cleaned by the filter and

MARLOW PUMPS DO MORE...

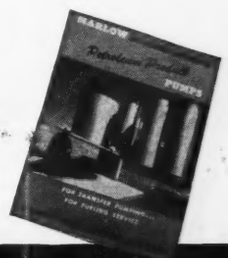
THAT'S WHY MORE BULK PLANTS CHOOSE THEM EVERY DAY

The Haskell, New Jersey, division of Home Fuel Oil Company of Passaic uses these two Marlow Self-Priming Centrifugal Pumps to transfer No. 1 and No. 2 fuel oil into storage from transport trucks and to withdraw from storage to load tank trucks.

A MARLOW Self-Priming Centrifugal Pump adds new, positive self-priming action to the old, time-proved advantages of the ordinary centrifugal. It automatically purges itself of vapor and air and operates efficiently on high lifts. A temporarily closed discharge valve does not effect a Marlow. Therefore, even *with the pump running continuously,* the man loading at the rack can shut off delivery intermittently while foaming subsides, and can do this without damage to the pump or other equipment.

Accurate air-free metering, important in tank car and transport unloading, is accomplished by a Marlow without the use of oversize air eliminators, special back pressure valves or air release heads. And a Marlow is designed to perform well on generous tolerances. That's why its high efficiency continues undiminished by tank scale, welding shot, and other abrasive solids that so frequently tear the heart out of a positive displacement pump.

For the complete story, write for new Marlow bulletin, "Petroleum Product Pumps".



MARLOW PUMPS • RIDGEWOOD, N. J.

slowed up as it passes through the porous bronze plug. The fiber discs, immediately above the plug, swell when moistened by the water and seal the valve. As more air accumulates the discs dry and shrink to permit the valve to vent and repeat the cycle.

Lexsuco Insulation Clip Attaches to Sheet Metal

A FASTENING, designed by Lexington Supply Co., Cleveland, Ohio, is known as the Lexsuco clip, used to attach insulation to sheet metal. Clip consists of a sharply pointed, flat-headed, hardened and tempered steel shank, which penetrates metal thickness up to 18 gauge. The slightly rounded shank provides strength for driving, two shoulders prevent penetration beyond the thickness of the insulation and a lock secures the clip in place.

The clips are available in standard sizes for insulation thicknesses up to 1", for use on both interior and exterior work. Prefastening of insulation sheets by wiring or other methods is not required. In application, the sheet is held in place, clips pushed into the insulation by hand and driven with a hammer.

MONARCH BURNER ACCESSORIES

THE NEW COMBUSTION HEAD

The Monarch G-74 Head embodies an entirely new approach to efficient means for intimately mixing air with atomized oil to provide a highly efficient controlled flame.

Atomizing Nozzles

Preferred Because:

1. Each nozzle is individually tested and checked for capacity against the flow of a calibrated master sample. Capacity tolerances are as low as plus or minus 2½%.

2. Standard nozzles will fire most gun type high pressure burners satisfactorily, but special series are also available for burners requiring specified spray characteristics.

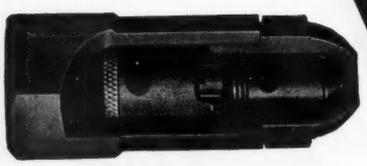
Note these features:

1. Suitable for capacity sizes from .75 GPH to 2.50 GPH.
2. Simple to install and has no external "adjustment" to juggle and there is no "guess work" about the settings.
3. Price—Less than the cost of a good fuel unit.

Send for Circular #1749

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in several models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.



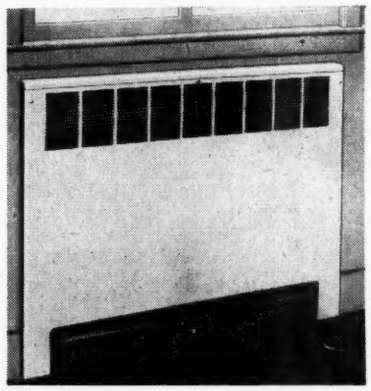
Write for Catalog D

MONARCH MFG. WORKS, INC.
2503 E. ONTARIO ST.
PHILADELPHIA 34 PENNA.

European Distributor: A. Coutau, Rue de la Scie No. 16, Geneva, Switzerland

U. S. Copper Convectors With Chain-Operated Damper

NEW MODELS of U. S. copper convectors, announced by United States Radiator Corp., Detroit 31, Mich., can be used



with steam or hot water heating systems. Adaptable for free-standing or semi-recessed installation, the cabinet type heating units employ heating elements of copper tubes and aluminum fins.

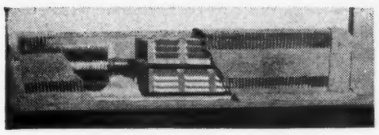
They are available in ten cabinet lengths, 20 to 64", four heights, 18 to 32", four depths, 4 to 10" and have a heating range from 10.1 to 102.0 sq. ft. EDR steam. A chain-operated damper permits heat modulation to any degree desired from full open to full closed position.

Three HandKlip Tools Announced by Porter

A SET of three tools, each employing the same power joint principle, the same pressed steel handles covered with a red plastic, have been announced by H. K. Porter, Inc., Somerville 43, Mass. One HandKlip is a shear cutter for steel strapping, wire stay and box wire; another an angle cutter for close cutting of cotter pins, rods or bolts. The third is a wire cutter for cutting soft wires, rods and ¼" bolts.

Minimite Company Offering Convect-O-Base Radiation

BASEBOARD RADIATION, developed by Minimite Co., Chicago 24, Ill., has been designated Convect-O-Base and contains eight essential parts from which any size installation can be made. The system is represented as being flexible



to the point where additional radiation can be added after installation without disturbing the heating system and radiation may be reduced by removing some of the heating elements.

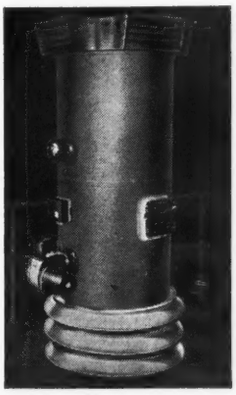
No. 11 Convect-O-Base units measure 1 ft. in length and are rated at 1 sq. ft. of radiation. No. 12 and 24 Convect-O-Fin sections, also available, are rated at 12 and 24 sq. ft., 3 and 6 ft. in length, respectively. Units measure 2″ in width and 8″ high, and use aluminum radiating surfaces. All units are designed essentially for installation with iron pipe, but No. 11 sections will fit on one inch copper water tube and Nos. 12 and 24 can be furnished with brass tailpieces for soldering to one inch copper tubing.

Ideal Wire Stripper Is Small, Hand Type

STRIPMASTER, improved hand type, pocket size wire stripper, announced by Ideal Industries, Inc., Sycamore, Ill., is available in four sizes for wire gauges from Nos. 22 to 8. Blades are interchangeable on all models. Squeezing the handles grips the wire, cuts the insulation and strips the wire, automatically. As the handles are released the grippers free the wire and the jaws return ready for the next cut.

Add Thermobloc Model 300 Direct Fired Unit Heater

ADDITION of model 300 to the Thermobloc line of direct fired unit heaters has



been announced by Prat-Daniel Corp., East Port Chester, Conn. The new unit, similar in many respects to the previously introduced model 555, measures

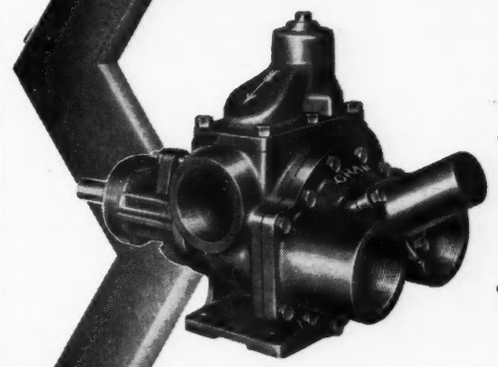
PUMP MORE GALLONS AT LESS COST WITH GRANCO!

You're money ahead every minute a GRANCO Pump is on the job! With a GRANCO you get

LOWER INITIAL COST
LOWER INSTALLATION COST
LOWER MAINTENANCE COST
LOWER OPERATING COST
LONGER TROUBLE FREE LIFE

=LOWER COST PER GALLON

GRANCO Pumps handle all petroleum liquids efficiently, from gasolines to asphalts. Whatever your requirements, there is a quiet, compact GRANCO Pump that will do the job better.



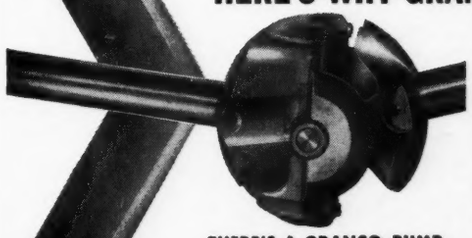
TRUCK PUMPS

Model DEE Truck Pump (illustrated), specifically designed for tank truck mounts, gives you smallest size and lightest weight per gallon delivered. Compact, quiet, leakproof. Easiest to install. Reversible action and four ports make pump adaptable to any pipe hook-up. You fit the pump to the installation—not the installation to the pump. Never needs priming.

BULK TRANSFER PUMPS

GRANCO PUMPS give unexcelled performance in Bulk Plant or Transfer Station work. High vacuum, high lift. Never need priming at start or finish of loading operations. No "bleeder" lines necessary. Shown at left, Model DEES—90 GPM GRANCO Pump with gear drive in oil-tight housing.

HERE'S WHY GRANCO PUMPS ARE BETTER!

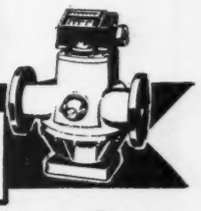


The exclusive, patented ball and squeeze action of the GRANCO spherical rotor—only moving part—provides direct positive expulsion from pump chamber into line of flow. Quiet, friction-free, no contact between rotor and housing—for better performance, longer wear. No gears, blades, scoops, valves or dragging and sliding parts.

THERE'S A GRANCO PUMP TO DO YOUR JOB BETTER

See your distributor, or write for full particulars. Sales and Service "at your service" throughout the nation.

Granco

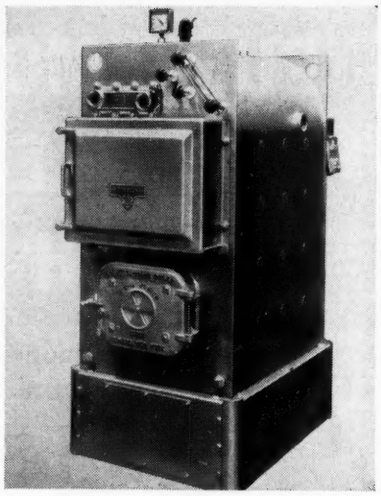


GRANBERG CORPORATION
Oakland 8, California

Also makers of Granco Rotary Positive Displacement Meters

7 ft. high and 30 ins. in diameter, with an output of 300,000 Btu/hr. Model 555 is 10 ft. high, 30 ins. in diameter and develops 550,000 Btu/hr.

Model 300 employs a gun type oil-burner, capacity 2.5 gph, as standard firing equipment and is delivered as a packaged unit. To accomplish installation only fuel, electrical and flue connections are needed. Heated air is delivered directly to the working area without excessive velocity. The unit is automatic in operation.



Improve Design Of Fitzgibbons R-Z-U Jr.

AN IMPROVED R-Z-U Junior steel boiler, designed by Fitzgibbons Boiler Co., New York 17, N. Y., is based on its earlier model but incorporates new features and changes for increased convenience and performance. Sizes from 1100 to 3000 net sq. ft. steam for mechanical firing are available, from 910 to 2480 net sq. ft. steam for handfired coal. Models also can be furnished for hot water heating.

All controls are easily accessible for servicing and cleaning and maintenance is facilitated further through placement of large doors in the front of the boiler for both tubes and firebox. Included in all models is a Fitzgibbons Tanksaver, submerged coil for domestic hot water. R-Z-U Juniors are built in accordance with ASME Code, rated on the basis of SBI Code and inspected by Hartford Steam Boiler Inspection and Insurance Co. In addition, each boiler is subjected to hydrostatic tests before shipment.

Galculator Device Adjusts Gallonage Readings to 60° F.

A SLIDE CALCULATOR, the Penn Drake Galculator, announced by Pennsylvania Refining Co., Cleveland 4, Ohio, consists of four different colored scales to correct gallonages to net gallonages at 60° F. The Galculator is made of a 4¼" x 9½" plastic jacket, holding a heavy cardboard calibrated slide.

A temperature range between 20° and 120° F. on each scale gives corrected readings for gasoline, naphtha, kerosene, fueloil and lubricating oil in API gravity values between 10 and 78.9. Priced at $1.00 each.

Winterglo Steel Furnace Unit Fired With Arcoflame Oilburner

A STEEL high boy type furnace unit, announced by American Radiator and Standard Sanitary Corp., Pittsburgh, Pa., is available in two sizes with bonnet outputs of 85,000 and 105,000 Btu/hr. Fired with an Arcoflame gun type oil-burner, the unit is factory-assembled and prewired. Its dimensions of 57¾" high, 28" wide and 28" front to back permit

The Apthorp TRUE ALIGNMENT
OIL BURNER NOZZLE

Guaranteed Accuracy

NOZZLE TIP — Made of stainless steel of fine precision workmanship. Special machining process produces smoother than ground finish on inside taper.
STEM — Stainless steel, perfect tapered end matching inside taper of tip. Oil grooves highly finished to assure perfect atomization.
SPRING — Made of tempered, heat-resisting stainless steel; cannot lose its tension. Permanently maintains position of stem within nozzle tip.
STRAINER — Made of monel or stainless steel. Fine mesh (120 x 120) for nozzles .65 to 1.35 G.P.H. capacity. 100 x 90 mesh for 1.50 to 5.00 G.P.H. Extra fine 200 mesh for .65 to .85 G.P.H. capacity available when specified.
SPRING RETAINER — Brass. Makes assembly or disassembly easy. Screwing it in revolves both spring and stem several times, thus automatically seating stem with perfect taper-to-taper fit inside nozzle tip.
All these parts, plus 100 pounds of oil pressure, combine to maintain the perfect *taper-to-taper* fit throughout operation of burner, a patented and exclusive feature of the APTHORP True Alignment Nozzle.
Packed in Lusteroid Vial, size clearly stamped on metal cover for stocking convenience.

WRITE FOR COMPLETE INFORMATION
BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Division, 7-17 Willow St., Lynn, Mass.

HERE'S WHY KLEMM FILTERS SELL FASTER!

because they are equipped with Chemistone the original Controlled Porosity Element . . . and only Klemm Filters offer "visible filtering." Your customers see the results—the dirt, sediment and other foreign matter trapped by a Klemm Filter. That's why Klemm units are so easy to sell and service. Results are positive! All your customers need this fuel protection. Make it a rule to suggest a Klemm Fuel Oil Filter on every call. YOU PROFIT ON EACH SALE . . . YOUR CUSTOMERS GET GREATER HEATING COMFORT.

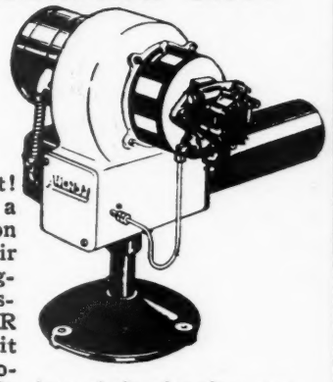
Streamlined • Engineered Packaged Right • Priced Right

Model 430G

Klemm
AUTOMOTIVE PRODUCTS COMPANY
1718 Damen Avenue Chicago 47, Illinois
Export Division: Guiterman Co., Inc., 35 S. Williams Street, New York 4, N. Y.

Low Cost OIL HEATING UNIT

For *Today's* Prospects!



Home owners like it! They appreciate a heating unit, precision engineered to fit their exact needs and budget! Offer your prospects an ANCHOR OIL BURNER . . . it conforms to their progressive ideas and fits into their planning perfectly.

Installation is simple and inexpensive. This Anchor Oil Burner is compact . . . occupies minimum floor space. Write for descriptive literature on Anchor's complete line of heating equipment . . . choice franchises now open. Anchor Division, Stratton & Terstegge Co., Inc., P. O. Box 311, New Albany, Indiana.

ANCHOR
OIL BURNER

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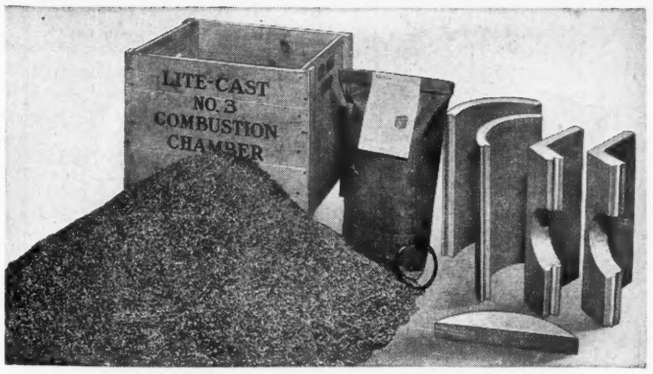

STANDARD PEAR SHAPED — PACKAGE UNIT
Everything included in wooden box for complete installation

ROUND—RECTANGULAR—
AND SPECIAL SHAPES ALSO AVAILABLE

OVER ¼ MILLION INSTALLATIONS

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COMBUSTION CHAMBERS
SOLD BY
LEADING JOBBERS NATIONALLY

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MONOGRAM
PRODUCTS COMPANY
731 N. 35th ST., PHILA. 4, PA.

NOW

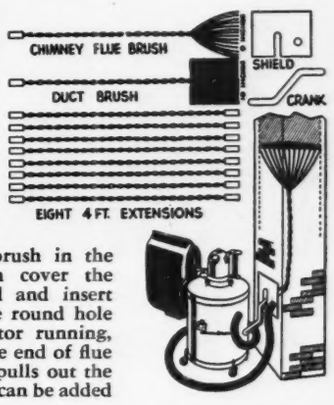
Model 175
Furnace Cleaner

General Electric applies its skill to improving Furnace- and Chimney-Cleaning Equipment

HERE'S the unit that's designed by General Electric engineers to make furnace cleaning a better business for you!

The G-E Model 175 Heavy-Duty Furnace Cleaner is simple in construction, powerful (1-hp), yet light in weight (51 lbs.). It's designed to clean all types of heating equipment.

The power unit has maximum vacuum of 43 inches water lift. It can be removed from the tank easily. Converts to a powerful blower by removing bag and substituting a blower coupling and a guard.



Also available is complete chimney cleaning equipment as shown here

To use the G-E Chimney Cleaning Tools, simply insert the flue brush in the chimney opening. Then cover the opening with the shield and insert the cleaner hose into the round hole of the shield. With motor running, the crank is used to rotate end of flue brush. Powerful suction pulls out the loosened soot. Extensions can be added to flue brush as needed.

Furnace Cleaners

GENERAL ELECTRIC

SEND TODAY
for complete specifications on this time-saving unit!

GENERAL ELECTRIC CO., Dept. 22-1612
1285 Boston Ave., Bridgeport 2, Conn.

Without obligation, send descriptive literature on G-E Furnace and Boiler Cleaner equipment.

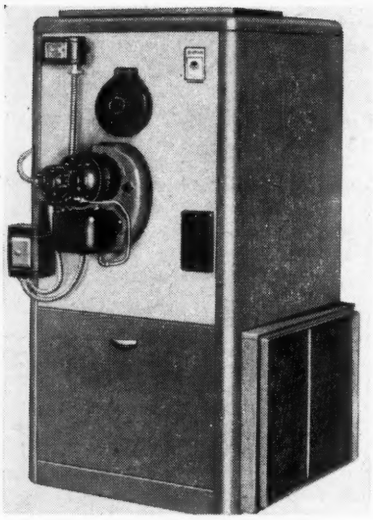
NAME .....

FIRM .....

ADDRESS .....

CITY ..... STATE .....

Fuel oil & oil heat



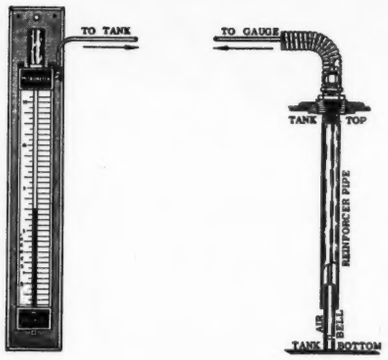
its passage through an ordinary door and its jacket liner keeps the exterior surfaces relatively cool and cuts down heat loss.

Burner and all controls are mounted on the outside front of the jacket for accessibility and adjustment, if needed. A durable steel heating element and stainless steel combustion chamber are features of the unit, whose seams are electrically welded. Its blower unit is of the double inlet type and the blower motor has an adjustable pulley making possible speed adjustments to suit the installation. Air filter and frame are attached to either side, or a bottom filter frame, with access from the front of the unit, is available.

New Petrometer Gauge Is Constant Reading

REFINEMENTS and improvements have been incorporated in its tank gauge by Petrometer Corp., Long Island City 1, N. Y., to reduce size and weight of materials to a minimum and maintain high quality standards of manufacture and performance. The gauge is constant reading, but a new principle aerator has been provided to check the correctness of readings by clearing the transmission line. An automatic check in the aerator protects the gauge from flooding.

The non-mechanical instrument, suitable for measuring all liquids in all types of tanks, features an installation requiring only one ¼" copper tube line and one compression connection at the gauge. Vertical liquid depth is indicated in inches, with space available to add gallon conversion figures at each inch mark. Adjustments in scale reading may be made to compensate for tank pitch.



Underwriters' Laboratories and the New York City Board of Standards and Appeals have approved the new gauges, after tests at pressures of 50 psi.

Magic-Heat Oil Boiler Unit Available In Seven Sizes

SEVEN MODELS of Magic-Heat steel boiler-burner units, offered by Marietta Metal Products Corp., Philadelphia, Pa., incorporate built-in copper tankless water heaters as standard equipment. Total output ratings of all models range from 400 to 1780 sq. ft. of steam radia-

GET YOUR FOOT IN THE DOOR

GET THOSE
HEATING PLANT REPAIRS
NEW INSTALLATIONS

Increase Sales Contacts with the
GRAND RAPIDS FURNACE CLEANER

Yes, here's your "in" to increased business and profits! The famous Grand Rapids Furnace Cleaner not only gets you into the customers basement but gives you an excellent opportunity to check over each heating plant as it is cleaned.

The Grand Rapids Furnace Cleaner puts you right where you can naturally recommend and sell necessary repair work and new installations.

The proven sales plan "A Plan to Increase Your Sales" leads the way to profits! The right to use this manual is reserved to users of the Grand Rapids Furnace Cleaner.

Write for free information today!

DOYLE VACUUM CLEANER CO.

233 Stevens St., S.W. Grand Rapids 7, Michigan

R & I Oil Burner Dealer Supplies

For more than twenty years R & I have specialized in the manufacture of the following products:

Stic-tite Insulating Cement for covering boilers, etc.
Hearth Cement for pouring special shapes, hearths of rotary burners and floors of chambers.
#3000 Refractory Cement for patching.
Combustion Chambers.
Insul-fil Rockwool Insulation for packing between combustion chamber and cast-iron base.
Black Furnace Cement for sealing metal joints.

Your supply house has these R & I products. Write us for bulletin OB-99.

R&I

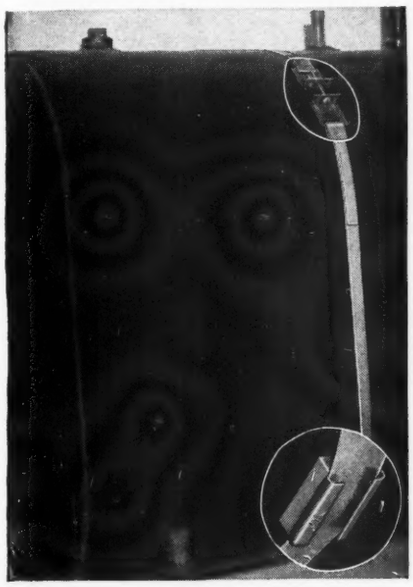
REFRACTORY & INSULATION CORP.
116 Wall St., New York 5, N. Y.
Chicago 4, Ill., Newark 2, N. J., Philadelphia 2, Pa.

*TANKIT

INSTANTLY STOPS

A Fuel Oil Tank Leak

Easily Installed in 2 minutes!!



In just two minutes the steel band can be placed around the tank, the oil resisting adjustable sliding patch placed over the leak, and tension applied by the screw. The leak stops! "SIMPLE BUT POSITIVE!" Packaged in metal containers, Tankits can be used again and again.

Now you can handle a cellar FUEL OIL TANK leak as a simple service call.

Replace the tank at your convenience!!

Avoid

- **Costly Pumpouts**
- **Excess loss of service time**
- **Damage to cellars**
- **Lack of heat**
- **Loss of customers**

Successfully Used by Leading National Oil Companies.

List Price

$3.75 ea., lots of 1 or 2
$3.50 ea., lots of 3 to 11
$3.25 ea., lots of 12 or more

Write for Nearest Distributor

Available at your supply house.
Factory Representatives and Jobbers considered.

*Reg.
*Pat. Pend.

THE TANKIT COMPANY
Cedarhurst, L. I., N. Y.

tion, 640 to 2840 sq. ft. hot water, heating surfaces from 23.5 sq. ft. for the small size to 106 sq. ft. for the largest model.

Gun type oilburners fire the units, with recommended rates beginning at 1.2 gph and ending with a maximum rating of 4.5 gph. Units are of one piece welded construction, delivered fully equipped. An extended jacket encloses the boiler, burner and controls, while one door covers both cleanout ports. Flue gases, leaving the combustion chamber, travel backward and forward four times wiping a wide area of water film before being discharged up the chimney.

Oiltogas Converter For Industrial Ovens, Furnaces

OILTOGAS converter, developed by North American Mfg. Co., Cleveland 5, Ohio, is designed for application to industrial ovens, furnaces and boilers now fired with gas, but which are not adaptable to substitution of oilburners. The converter supplies high temperature air to the point in the piping where gas and air ordinarily mix. Here atomized oil, introduced into the hot air stream, vaporizes and burns. Existing gas burners and piping are not altered. Converters are available in capacities up to 8 million Btu, are automatic and include flame safety devices.

Quick-Shot Soldering Iron Heated by Chemical Cartridge

QUICK-SHOT soldering irons, offered by Kemode Mfg. Co., Inc., New York 11, N. Y., use a chemical cartridge, composed of certain magnesium-type powders, to heat the iron to a working temperature quickly and maintain the temperature for seven minutes. The cartridge, inserted directly behind the soldering tip, is ignited by impact of a spring rod, and generates heat without releasing gas. Six interchangeable tips, from 3/8" to 1 1/8" in size, are available.

Rocklined AquaHeaters Include New Small Size

DEVELOPMENT of a rocklining process in the AquaHeater steel shell has been announced by Joseph E. Lewis & Co., Inc., Baltimore 30, Md., manufacturers of the tankless water heaters. Addition of the chemically inert rocklining sepa-

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BY USING AN

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You'll gain new customers and keep old satisfied customers when they know that you are delivering clean, dry fuel to them.

Excel-So Separators are guaranteed to deliver product 99.99% free of water and pipe scale, muck, and debris down to 25 microns. Recommended for fueloil, diesel fuel, Butane-Propane, gasoline, kerosene and other light oils.

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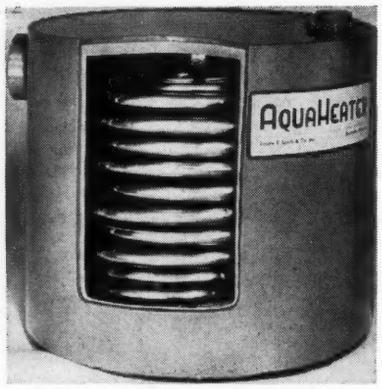


rates the steel jacket from the copper coil, stopping any galvanic action or corrosion. When boiler water is first introduced into the heater, it is explained, water molecules slip through the pores of the rocklining, push outward to the walls of the heater's steel shell, and actually become bound in the rocklining to act as a shield and prevent rust formations.

A new heater, supplementing the 5 and 8 gpm sizes already in use, delivers 3½ gpm and has been designed for the small home with one bathroom. The smaller model has the same dimensions as the 5 gal. size, with less heating surface, and incorporates its features of pre-cut insulation, welded steel sheet and turbuflow copper coil.

Cleaver-Brooks Boiler For Hot Water Heating

A HOT WATER HEATING BOILER, announced by Cleaver-Brooks Co., Milwaukee, Wis., is adaptable to panel, gravity or forced feed hot water applications. Available in three sizes, 250,000 Btu, 550,000 Btu and 730,000 Btu output, units are completely automatic fired by oil or gas.

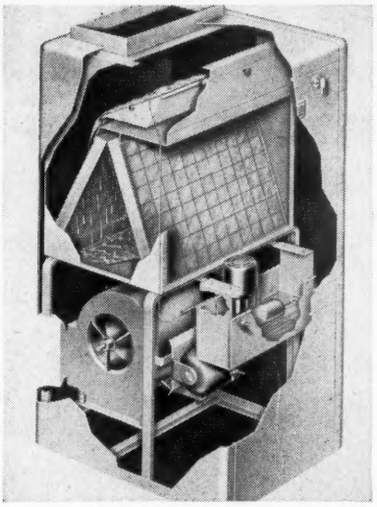
The large unit is 113″ long, 44″ high, 26½″ wide. Front end of the base, including burner, can be removed for separate handling where required. A four-pass construction of the hot water boiler shell is employed in the units, which are equipped with industrial type safety controls.

Nibblex Cutting Tool For Metals Up to 20 Gauge

NIBBLEX cutting tool, offered by Nord International Corp., New York 6, N. Y., is described as capable of circular cuts with radii as small as 1″, usable on sheet metal up to 20 gauge without bending, burring or stretching of metal. The cutter is small, weighing 13 oz., and can be attached in the chuck of any ¼″ motor in the same manner as a drill. Unit consists of seven parts, any of which is replaceable at comparatively small cost, and can be used effectively on corrugated sheet or pipe and plastic sheets.

Teg Conditioner Marketed By National Air Conditioning

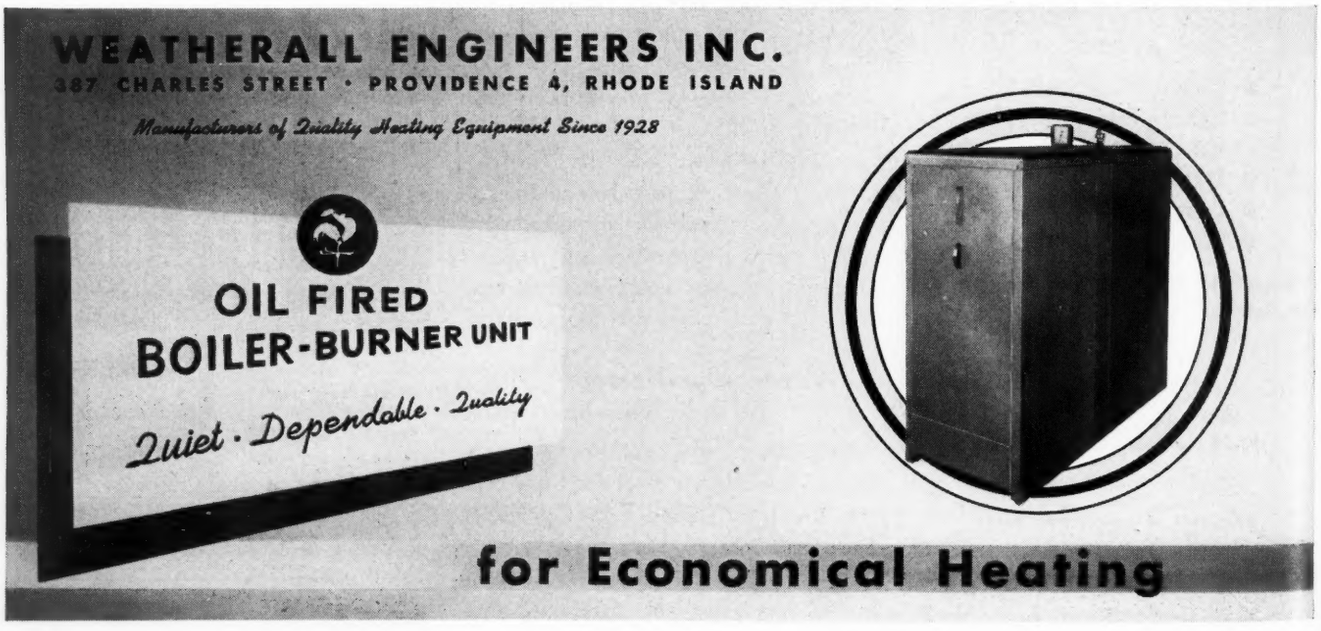
TEG CONDITIONER, being marketed by National Air Conditioning, Inc., Johnstown, Pa., cleans, humidifies and controls relativity humidity of the air passing through it. A motor-driven blower draws air over a permanent, glass fiber filter-cell, which is saturated continuously by liquid Tegelene, circulated by a small sump pump. Air passing through the filter-cell is cleansed, humidified by the water in the Tegelene and picks up small amounts of triethylene glycol vapor, which kills certain types of airborne bacteria. The air next passes into a duct system, or directly into the home, as desired.



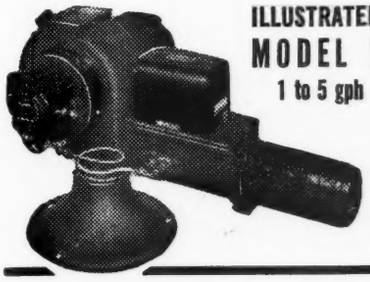
Water is admitted to the sump by an automatic float valve to maintain a fixed proportion of water and Tegelene, which in turn keeps the air at a definite relative humidity. The units have been used primarily with warm air heating systems, but can be installed also with steam or hot water heating systems.

Photoswitch General Purpose Photoelectric Control

TYPE 20DJ1 photoelectric control for general industrial and machinery appli-


WEATHERALL ENGINEERS INC.
387 CHARLES STREET · PROVIDENCE 4, RHODE ISLAND
Manufacturers of Quality Heating Equipment Since 1928
OIL FIRED
BOILER-BURNER UNIT
Quiet · Dependable · Quality
for Economical Heating

One of the *OLDEST BURNERS* ...one of the *FINEST!*



ILLUSTRATED
MODEL L
1 to 5 gph

U. S. oil burners offer much more in performance and fuel economy—for much less in proportionate cost.
One of the oldest manufacturers of oil burners, if not *the* oldest, U. S. has kept abreast or ahead of the times in burner design and mechanical engineering.
3 models are available, 1 to 5 gph, 4 to 8 gph and 7 to 16 gph . . . a range to cover almost any heating specification.

Write, wire or phone for detailed information.

UNITED STATES BURNER CORP., HARTFORD, CONN.

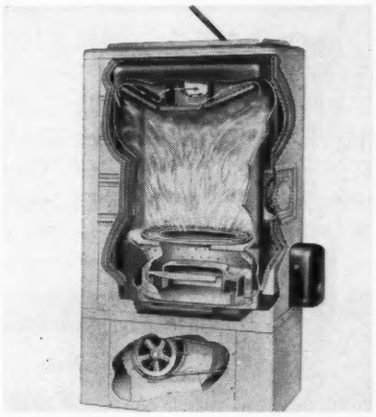
cation has been announced by Photoswitch Inc., Cambridge 42, Mass. It furnishes automatic control for hundreds of specialized industrial processes. Among its many uses are counting, short-range signal systems, motor or valve control, machinery safeguards, safety alarms and door operator service.

Phototubes, which must be located where operations are to be controlled, are available integral or in separate housings. Control provides for relay operation at any predetermined level of illumination within range of 10 to 50 foot candles and is rated 10 amperes, 115 volts AC; 5 amperes, 230 volts AC; non-inductive ½ hp.; 115/230 volts AC with both poles wired in parallel.

Add HI-BOY Oil Furnace To Lonergan Heating Units

MODEL OF-970-HI-BOY oil furnace is announced as the first of several new heating units to be introduced by Lonergan Mfg. Co., Albion, Mich. When completed the line will constitute a complete set of gas and oilfired heating units for the small home market. The new oil furnace incorporates the patented oval-type "Wide Flame" Lonergan vaporizing oilburner and has a rated output of 70,000 Btu/hr.

Additional features include a "Mini-



flow" pilot, described as a burner within a burner and not a turn-down setting of the main burner, factory pre-set and automatic draft control, fan and limit switch. The stainless steel burner fires into a rust-resistant 16-gauge rectangular combustion chamber. An air filter and circulating blower are built-in the 20 gauge steel casing.

Flag-It Wire Markers Are Self-Adhering

SELF-ADHESIVE wire markers, introduced by Flag-It Wire Marker Co., Los Angeles, Cal., are designed to provide instant wiring identification. A Flag-It can be slipped around a wire to form an encircling marker, or its two ends can be pinched together to form an upright, numbered flag. It adheres without moistening, is removable without harming surface, reported unaffected by humidity or temperature.

Markers are attached to 10" cards, 40 to the cards, for application to wire with outside diameters up to .2". Markers measure 7/8" by 3/8" wide. Each marker has four vertical characters to provide visibility on either side of the flag and around the wire. Cards are pre-printed in numbered or alphabet series.

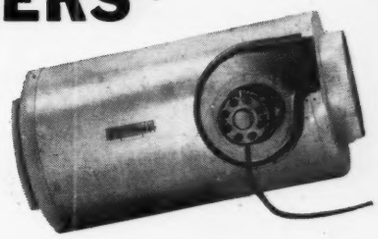
HomEase Mist-O-Miser Is Low Pressure Fuel Unit

MIST-O-MISER, low pressure fuel unit developed by HomEase Products Co., Paterson 3, N. J., produces an atomized type flame, capacities 1/5 to 4 gph, by a

$ $

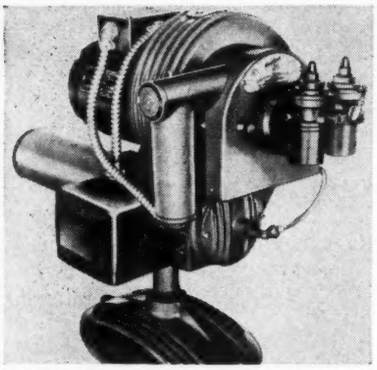
RAYFIELD "HEAT RECLAIMERS"

1. Low in price—fully automatic—easy installation.
2. Install on Boilers, Furnaces or Heating Stoves.
3. For use with ANY fuel—Coal, Gas, Oil or Wood.
4. Increases output of any Gravity Warm Air Furnace.
5. Heat Basements, Play Rooms, Attached Garages, etc.
6. The hotter the stack—the more heat reclaimed.
7. Positively saves wasted heat going up the chimney.



WRITE TODAY FOR DETAILS, PRICES AND DISCOUNTS

C. L. RAYFIELD COMPANY 2010 SO. HALSTED ST., CHICAGO 8, ILL.



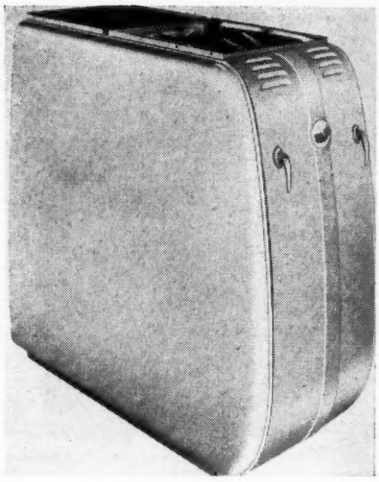
single adjustment and without changing the large orifice Mist-O-Miser nozzle. Fueloil entering the unit is pre-atomized before reaching its vaned rotor—the only moving part—and is mechanically heated to 100° above ambient. The oil then travels to the nozzle through heat-insulated tubing, where it is re-atomized by the nozzle, whose orifice is approximately 10 times the diameter of a 1 gph high pressure nozzle, making it virtually clog-proof.

A screw-type flame adjustment increases or decreases the fire size and calibrated fire sizes also can be obtained by following instructions furnished with each burner. The unit is advanced as eliminating the necessity for a return line on outside tank installations and obviates the need for a wall pump. At 1/5 gph firing rate, nozzle pressure approximates 2 lbs., with increases up to 5 lbs. when firing at 4 gph. Addition of the easily replaceable Mist-O-Miser low pressure fuel unit to HomEase burners is expected to increase the cost only by a small margin.

Complete Range Available In Mor-Sun Steel Furnaces

ADDITIONAL MODELS for gas and oilfiring, announced by Morrison Steel Products, Inc., Buffalo, N. Y., afford a complete range of sizes of Mor-Sun steel forced warm air furnaces up to 175,000 Btu/hr. Heat exchangers are of 12 gauge steel, designed for efficiency without internal baffles.

The furnaces are die-stamped, including the modern styled casing, with all models shipped from the factory as package units, completely assembled. Subassemblies permit the casing sides to be removed easily, if a small basement entrance is encountered, leaving the bottom pan, blower, burner, heat exchanger and divider plates in a narrow assembly. Replacing the side casing assemblies is represented as taking only a few minutes.



Hotop Company Designs "Single Stop" Service Truck

TRUCK BODIES, developed by Fred J. Hotop & Co., Kalamazoo 11, Mich., have been designed to permit service men and installers to carry with them all necessary parts and tools, with ample storage compartments provided. The

When you sell...

Gulf Fuel Oil...

You're selling...

clean heat, comfort!

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THE IDEAL GUAGE ... FOR BASEMENT TANKS!

CHECK THESE OUTSTANDING FEATURES

- Time and money saver—comes fully assembled.
- Accurate readings—measures in 10-gallon spacings.
- Precision built for years of service.
- Eye appeal and easy readability.
- Listed as approved by Underwriters' Laboratories.

When making replacements and checking oil burners for greater efficiency, install *Galongage.*

When ordering, specify depth of tank and size of opening.

APPLIED MECHANICS COMPANY

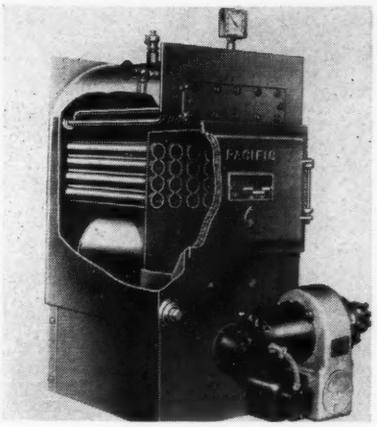
167 OLIVER STREET, BOSTON 10, MASSACHUSETTS

bodies fit any ½-ton pick-up chassis and are delivered F.O.B. Kalamazoo.

Eight different compartments provide space for compact storage of tools, parts and equipment. A four-part compartment along the right hand side of the truck, with a two-part general storage compartment along the other side. A compartment across the front of the truck, extending almost its entire width, accommodates large articles, while a compartment in the back occupies most of the truck body. It is provided with a platform that slides out on rollers, and, with the addition of two pipe legs, becomes a work bench. Space for carrying a three-legged vise also is provided. Roof of the body is one-piece sheet steel.

Pacific Oilburning Unit Employs Plate Flue Boiler

AN OIL BOILER UNIT, recently introduced by Pacific Steel Boiler Div., United States Radiator Corp., Detroit 31, Mich., is designed for steam and hot water domestic heating systems. The unit consists of a Pacific Plate Flue boiler, with a Pacific oilburner, flanged to the steel base of the boiler.



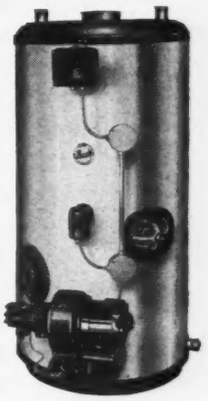
Boilers are available in four sizes, SBI net ratings from 400 to 900 sq. ft. steam, 640 to 1440 sq. ft. hot water. Heating surfaces range from 24 to 53 sq. ft.

Smaller Size Cutrode Available From Eutectic

FOR CUTTING thin sheet metals, Eutectic Welding Alloys Corp., New York 13, N. Y., has announced a 3/32" dia. Cutrode, cutting electrode, for stainless, bronze, nickel, copper cutting. Used with small AC welders, the new size may be used with a guide or rule.

Bock 124E Boiler-Unit Fired With Gun Burner

MODEL 124E boiler-burner unit, recently announced by Bock Corp., Madison 3, Wis., is fired with a gun type oilburner and is available as a hot water generator for apartments, launderettes and similar applications. When furnished as a hot water heating boiler, the unit is furnished in black iron; as a water heater, the unit is galvanized and equipped with a hand hole clean-out.



The unit measures 61" high, 28" outside diameter, with 1½" water connections, 6" smoke pipe connection. Tank is factory tested for 300 lbs. pressure and the heating boiler is equipped with a ¾" tapping for temperature and altitude gauges. Vertical sections of the sectional type combustion chamber furnished are 5½" wide so that they pass through the unit's 6" door opening.

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Everyday Snags

Oil Consumption

"During the coldest weeks, how long will the oil in a 1,000 gallon tank last me," home owners frequently ask in connection with selecting the size of their oil tanks or switching to larger tanks.

To answer this question, use this thumb rule: During the coldest month, January, a house needs as many gallons of oil a day for heating as it needs tons of coal a year to heat it.

This rule works well for cities having a degree-day total load for the heating season roughly between 5,000 and 6,000.

Example: A house heated by seven tons of coal a year will need seven gallons of oil a day in January, or will use about 210 gallons of oil per 30-days of coldest weather. An apartment house previously heated by 300 tons of coal a year will use about 300 gallons of oil a day in January. Of course, on the coldest day of the heating season the house would use much more than seven gallons of oil in 24-hours, and the apartment house would use much more than 300 gallons of oil, because the coldest days of the year are much colder than typical days in January.

* * *

To Locate A Short-Circuit

If you are having a hard time locating a loose connection, bring a table radio down the basement and turn it up to full volume. Put current on the troublesome circuit, budge and nudge terminals and connections which might be loose, and listen for clicking from the radio. To find a loose connection in the low-voltage circuit of a burner panel, for example, keep the burner going and move all the low-voltage lines.

To locate a short-circuit which blows every fuse you try to use for the circuit, screw an electric light bulb into the fuse block instead of a fuse. With nothing turned on in a healthy circuit, the bulb won't light. But with a short-circuit that would blow a fuse if you tried one, the bulb will stay lit. Try this and that to locate the short. Remove the covers from junction boxes, controls, motors, switches, etc. and budge the connections. Look for metal-to-metal shorts which result from overcrowding of wires in junction boxes and from worn-through insulation on wires. When you affect the short-circuit, the light bulb in the fuse block will blink; when you end the short, the bulb will go out.

If you can't keep an eye on the light bulb in the fuse box as you go over the wiring, use the radio idea to help you find the short-circuit. Turned on all the way, a radio will click when the light bulb flickers because you've put your finger on the location of the short-circuit.

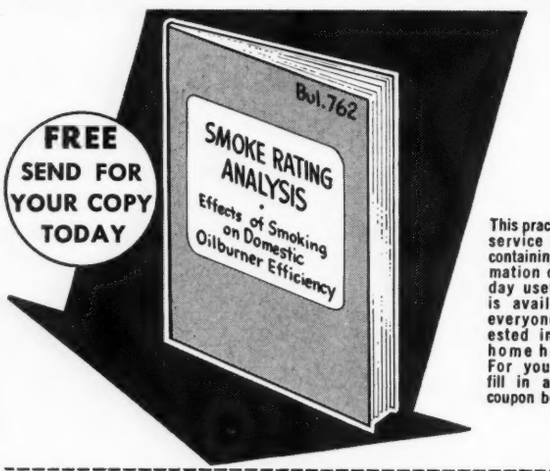
* * *

Oversize Radiators

"The thermometer on my boiler never goes higher than 125° even in zero weather," a heating plant owner told a contractor who was looking over the old system because an addition containing three stores and five apartments was being planned for the ten-family apartment house. The owner said this

"SMOKE RATING ANALYSIS"

Effects of Smoking on Domestic Oilburner Efficiency



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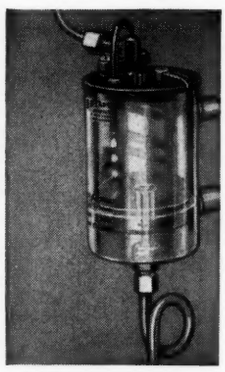

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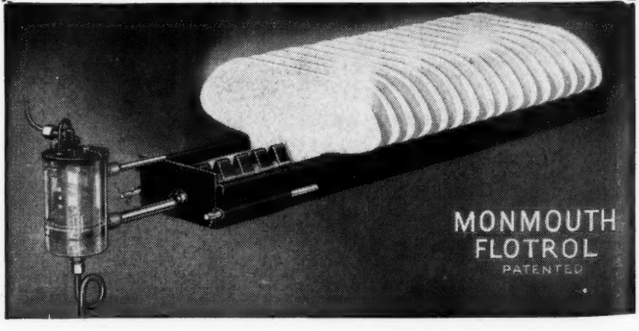

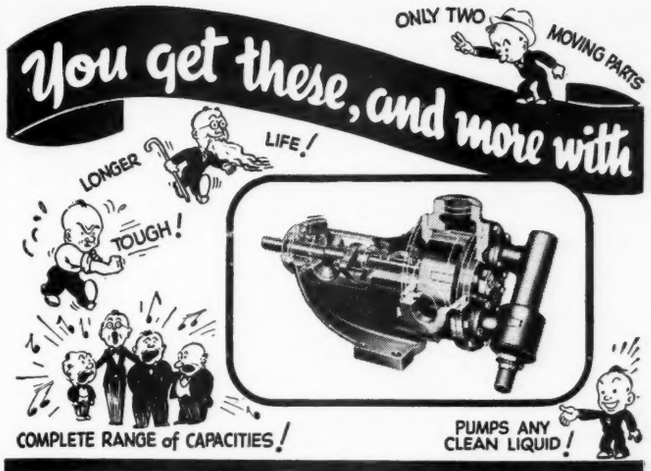

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proudly. In his opinion, 125° temperature for the hot water heating plant on a zero day proved his heating plant excellent.

"I'm certainly glad you emphasized that," replied the heating contractor, "because it proves what I've suspected right along. The radiators in your existing building are twice the size they should be according to good practice. True, that's saving oil for you, as the old-timer who put in the oversize radiators matched the boiler size to them, and you've got twice the size boiler he would have installed if he'd put in the right size radiators.

"But the oversize radiators you've already got create a problem about heating the new stores and apartments. You want the existing building and the addition heated by one big, new boiler.

"All right, then one way to solve the problem is to install radiators twice the size they should be in every new room and store. Then, as in the existing building, a boiler temperature of 125° will be high enough for the new rooms and stores on a zero day. I suspect, though, that you won't like the oversize cost of the oversize radiators in the addition you're putting up.

"Another solution, and I hate to think of going through with it, is to correct the over-radiation in your old building; take out the oversize rads and put in rads of the proper sizes. Wind up with about 180° radiators in the old rooms and the new rooms on a zero day, since with radiators of the proper sizes a temperature of 180° for all the radiators will heat all the rooms properly on the coldest days.

"I recommend a third way out of the problem. Leave the existing heating plant alone, and put in a completely independent oil-fired plant, which will have among other advantages a room thermostat of its own, to heat the new apartments and stores you are putting up."

"Good thing he bragged about the low boiler temperature in zero weather," concludes the contractor. "It would have been just dandy for me if I'd hooked up a new system with proper-size radiators, needing 180° temperature in zero weather, to his old oversize system that would drive out the tenants with heat if you ever brought it up to 180°. Either we'd have frozen his new tenants to death or cooked his old tenants and had complaints about high oil bills. From now on, I'm making doubly certain that in every system I revamp the radiators are all figured on the same basis."

* * *

Preventing Meddling

A couple of times a year, relates a service man, he received calls about the heat going wrong in a certain large residence. Each time it turned out that the bedrooms and bathrooms were getting overdoses of heat because a four-year-old boy playfully turned off the living room radiators, which were the only radiators near the room thermostat.

The service man's complaints about this, made to an unimpressed maid-of-all-work because Mother never was home, brought only dim smiles and tolerant shrugs indicative of "What can a person do with Junior?"

"I settled it once and for all time on my sixth headache call to that house," says the service man. "I made it impos-

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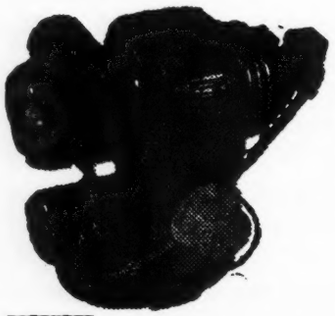

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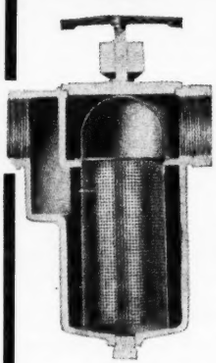

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sible for a four-year-old to turn off the steam radiators. First, I re-packed the valve glands, used lots of packing, and took up on the nuts with an 18" Stillson wrench. Second, I took the hand-wheels off the valves and hung them up on a nail in the basement. Third, I showed the maid what I'd done and told her that if Madame had any questions about it or the bill she'd get for my work, she should telephone me and I'd gladly call to explain why some work had to be done to offset Junior's work at increasing the fueloil consumption. She never did telephone me. I think she knows Junior."

* * *

Firebox Improvement

To wind up with higher flame temperatures and improved, quieter combustion in furnace-burner units which have flat-bottom circular stainless steel fireboxes, one service engineer grinds up light-weight insulating firebrick and spreads the powder on the floors of the fireboxes. About a one-half inch thickness in the center proves satisfactory; thicker, the added material causes carbon to form on the floors of these fireboxes. At the edges of the firebox floors, the refractory powder is piled up to a thickness of about two inches.

Try this stunt where you have flame noise complaints or can't get the CO_2 up to a level that pleases you, recommends the engineer.

* * *

Wall Flame Rotaries

Slow ignition of many wall flame rotary burners is caused by the spark electrodes being set for relatively long sparks. If you are servicing a wall flame rotary burner which fails to light and goes off on safety every so often, check to find out if it is feasible to adjust for half the length of spark. Try a spark gap length less than 1/8". A short gap gives a hotter spark by causing the transformer to give additional current, and gains the advantage of concentrating the heat of the spark on one spot. A spark that "wanders" over a sizable area, being whipped about by air currents from the blower wheel, is decidedly ineffective. The big disadvantage of an exceedingly short spark gap is that it can be short-circuited by a small piece of carbon or boiler scale. Avoid that trouble, but make certain not to avoid it by such a great margin that you head straight into the troubles of a long, skimpy spark which wanders.

* * *

Position Of Gun Tube

If you have doubts about whether the gun tube of a burner should be level or slanted either way, obtain information from the manufacturer of the equipment. Some manufacturers want the gun tubes of their burners level. Others aim to have the blower ends of the gun tubes lower than the nozzle ends; oil dripping from the nozzle because the shut-off valve does not close when the burner is idle will appear on the basement floor and cause the owner to put in a service call. Still other manufacturers want the nozzle ends of the gun tubes low, so that the fireboxes can absorb properly any oil dripped from nozzles with the burners idle.

Be especially careful about furnace

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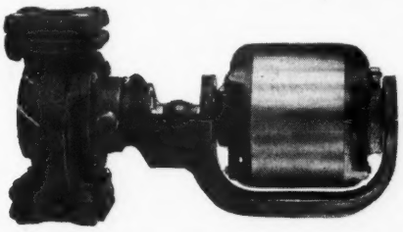

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and boiler units. With the gun tubes sloped improperly with some of these, a leaky shut-off valve can cause oil to collect in considerable amounts in or below a stainless steel firebox. The starting of a burner with a quart of oil trapped where it will be ignited by a red-hot firebox can cause more complications than should be the result of a routine leaky shut-off valve. Aside from that, with certain furnaces it is best to avoid having oil drip into the jackets as a result of shut-off valve leaks, as oil-soaking of the furnace or the floor under it can be the start of a long series of service calls related to oil odors and these calls have a tendency to go on long after the leaky shut-off valve has been repaired.

* * *

Smokepipe Should Slant

While there's no hard-and-fast rule about the amount of slant, a smokepipe should slant up definitely on its way from a furnace or boiler to a chimney connection.

A case of stubborn starting pulsation from a modern forced-circulation warm air furnace was ended recently by attending to the smokepipe. The installer of the smokepipe had intended to have it run level but had supported it poorly with the result that it sagged down 6" in the middle of its 12 ft. span. Facing tremendous starting pulsation a few months after the furnace-burner unit had been put to use a diligent service man did a shipshape job of bringing the middle of the smokepipe up to its original position and wiring it securely. As this improved the starting but did not end the pulsation, the next week the service man was back on the job. He made another opening in the chimney, a foot higher than the first opening, filled in with cement the large opening in the bottom of the chimney, below the bottom of the smokepipe at its new, higher location, and did away with all the air leaks previously at the bottom of the chimney flue. One result was a great slope for the smokepipe. Another was the smoothest imaginable starting of the burner, although it can't be said that this was obtained without some work on the burner. The service man sums up this work as two hours spent trying different nozzles, atomizing pressures, settings of the air damper on the burner, and adjustments of the air-handling parts in the burner gun tube. But, he says, these efforts would not have given silent starting if the smokepipe and chimney shortcomings had not been eliminated first.

* * *

Suction Line Leaks

The chief engineer of a burner manufacturing company located in the midwest gives this hint for checking on leaks in the suction line of any pump-equipped burner. Disconnect the return line from the burner. Connect instead, to the burner port supposed to go to the return line, a piece of 3/8" copper tubing about four feet long.

Run the burner, directing the return line oil into a pail until the pail is one-third full of fueloil. Then, with the burner still running, keep the end of the temporary suction line under the oil in the pail, and observe whether or not air

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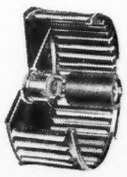

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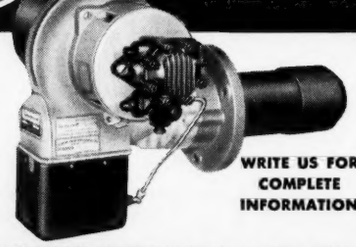

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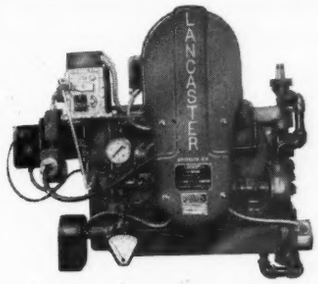

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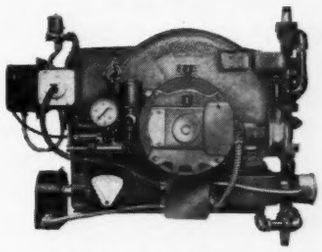
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bubbles come out of this line along with the fueloil. If the oil in the pail clouds up because of air in the oil or frothing and churning, turn the burner off and wait until the oil clears before making a final test. Bubbles in the return line oil indicate a suction line leak, of course. If you put thickened shellac on a leaky pipe fitting in the boiler room and end the suction line leak, for example, you'll end the bubbles in the pail of oil.

The man who describes this test has used it for years on horizontal rotary cup burners but points out that it serves as well for any type of burner equipped with a pump and a return line. It serves well for certain low-pressure burners and for all pressure burners.

* * *

Flexible Coupling Noises

At times certain burners give a humming, throbbing sound because of slight misalignment of their flexible couplings.

When a burner with a flange-mounted fuel unit gives this trouble, loosen the bolts which hold the fuel unit in place and try shifting the fuel unit one way or the other to eliminate the sound. Tightening one bolt somewhat more than the other, where two are used, often gives quiet operation. Another and perhaps a better cure lies in using a piece of paper or cardboard as a shim to line up the fuel unit shaft with the motor shaft. Properly inserted between the fuel unit flange and the burner main casting after the fuel unit bolts have been removed, the shim permits tightening both bolts fully.

* * *

Plugged Air Inlets

Certain burner motors made quite a few years ago and fitted with ventilating openings close to the blower wheels they drive have a tendency to overheat when these openings become plugged with dust. As over-lubrication increases this tendency by collecting dust on an oil film near the openings, the owners of these burners should be warned, once the motors have been put in good condition, not to over-oil them. A good rule for many burner motors doing the usual work on typical domestic installations is to oil each bearing twice a year, once in September and once in January; count the drops of oil given each bearing, and make certain to give between ten and twenty (no more) drops, using your judgment. Automobile motor oil of 20 or 30 SAE viscosity usually is suitable. Oils of extremely light body are not the best for burner motors.

* * *

Keep Drain Hole Open

When installing a gun burner, bear in mind that at the firebox end of the gun tube of a modern burner there is a slot or drain hole to permit the escape of fueloil from the bottom of the gun tube in case the shut-off valve leaks. Oil that drips into the gun tube with the burner idle should not remain there and form a pool. It should drain, preferably to a location at which there is no chance of its igniting and burning later when the burner starts and the firebox becomes red hot.

When you install a gun burner, make certain the drain hole of the gun tube is not plugged tight-shut with refractory cement or other material.

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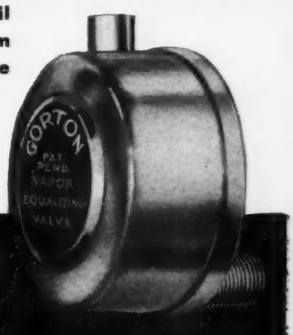
Says: Mr. John McGillis,
McGillis Service Engineering,
Brockton, Mass.

GET THE FACTS
Write for BULLETIN No. 116DA.



GORTON HEATING CORPORATION
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CRANFORD NEW JERSEY

Oilheating Trends

(Continued from page 11)

sating their old customers who help them get new sales. The most common method is to give present oilburner users a five or ten dollar gift for each prospect they supply which develops into a sale. Quite a number of dealers, instead of giving cash, offer an assortment of attractive merchandise gifts in the form of houseware. Apparently it pays to reward the customer for turning in prospects because those companies who do make it worthwhile report that 47% of all of their sales, on the average, originate through leads from old customers. On the other hand, the companies who do not reward old customers for prospects find that 38% of their sales are made to families suggested by present customers.

HOLDING CUSTOMERS: Dealers were asked this month what luck they had had in hanging onto customers for whom they had installed oilburners at any time since they went into the business. The composite report is that they are now selling oil to 79% of all the families to whom they have sold burners, and they are rendering burner service to 86% of these families. That indicates a considerably lower rate of turnover than would have been expected. One explanation is necessary. The percent of oil customers retained is based on only those companies selling oil rather than on the combined experience of the whole group, and also it includes only the customers whose burners were sold during the period when the company was also selling oil. For example, a number of reporting dealers said that they sold burners for fifteen years or so before they sold oil so, they included in their calculations only their installations of the combination burner and oil days.

FUELOIL STOCKS AND PRICES: With fueloil prices showing a soft tendency in many parts of the country, a good many marketers have reported that they are holding their bulk stocks to the lowest working level. Among the companies reporting this month, 69% say that they are following that course. The other 31% continue to buy and work with normal sized stocks. Part of the reason for this is that not all companies immediately reduce their selling prices when the major companies in a market reduce their posted prices. Seventy-five percent of those reporting say that they immediately follow the major company's posting, but the other 25% are inclined to work off their current bulk stocks at the old price before making a reduction. There is one influencing factor in this analysis. Twenty-five percent of the fueloil marketers reporting do not operate their own bulkplants. Almost universally this group followed the major postings to the day. After eliminating this group from the total calculation, we find that among those companies having their own bulkplants, 69% follow the major postings immediately upon any price drop, while 31% attempt to ride it out with the old prices until they unload. This safety measure may be impractical in later months when the fueloil market again becomes hotly competitive at the retail level, but today it makes sense to try and avoid inventory losses or at least a large number of dealers believe that it does.

TRUCK DRIVERS: A primary topic of conversation among fueloil marketers

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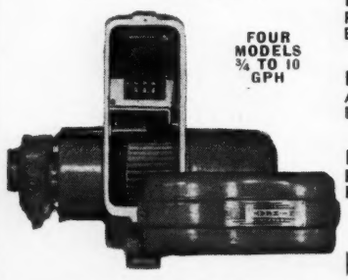

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LITERATURE ON REQUEST

RET-RAC CORPORATION

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EXCLUSIVE TERRITORY TO RELIABLE DEALERS.

this winter has been on the question of what to do with truck drivers in an extremely mild season. Naturally, there was no problem in the Northwestern states, but through most of the East and Midwest degree-days were extraordinarily limited.

What They Did With Drivers

	Percent of Dealers
Laid off some	11
Shifted to other work	11
Reduced hours	10
Worked ahead on Degree Days	49
Let them loaf and prayed for cold weather	19

The table shows the percent of reporting dealers who employed primarily each of five methods to handle this most difficult situation. The half of them who relied on working ahead on degree days undoubtedly selected the device most pleasing to the drivers themselves, but at the same time they obviously increased their costs, since a number of them reported getting down to average drops as low as 125 gallons.

DEALER COMMENTS: Representative dealer comments on questions of the month were: "We try not to install burners during January and February, persuading the buyers to let us wait until March and April" . . . "Poor rail deliveries (storm area) caused depletion of reserve stock giving us as much trouble as we had during the shortage last year" . . . "We are cursed with competitors who will not service their equipment" . . . "All of our customers are heating with oil for less than their former coal costs" . . . "Pot type burners are still our cheap competition; a complete FHA heating system with ducts going into new homes for $650" . . . "Lots of service business offered but almost no good mechanics about" . . . "This is the first time in two years that the oil jobber has had enough margin in the Indiana Standard territory" . . . "We are having real competition from bottle gas distributors who sell heating" . . . "Our fueloil margin though improved a little is still too low" . . . "Business quiet as a whole" . . . "For the first time in years some of our customers are drifting away when we charge them for oilburner service" . . . "The greatest trouble on burner sales just now is coal in the basement" . . . "The major oil companies will not tell the public about sufficient oil, and people are still afraid, and will not believe the oilburner dealers" . . . "Because we have always worked toward high-grade installations and professionalized service, we're looking for a good and profitable 1949" . . . "We're hoping for an oil price drop in our market and we can't understand why we haven't got it; for the first time in a long while the boys are now starting to cut prices" . . . "What chance would the small fellow have against the majors who insist on being petroleum outfits from the ground to CO_2 if we didn't drop the price the minute they do" . . . "Is there any known reason why the refiners are not interested in increasing use of fueloil for heating?"

◈

Paul M. Millians was elected vice president, Commercial Credit Co., Baltimore 2, Md., at the December 30 meeting of the board of directors. In addition to other duties, he will continue a study of consumer requirements, working capital and related business problems for Commercial Credit Corp., a subsidiary.

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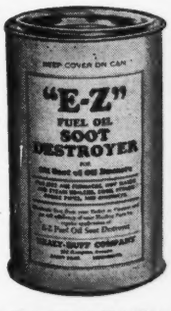
MORE PROFIT PER
Service Call



When the oil burner Servicemen answer a call it is easy many times to add furnace cleaning to the job. E-Z Fuel Oil Soot Destroyer (for fuel oil soot only) does a thorough, clean, safe job in just one application. Takes but a few minutes. Keep a 5 lb. Can on each service truck, always. Stock the 1 lb. Cans for sales to your customers. If your Distributor cannot supply you, order direct.

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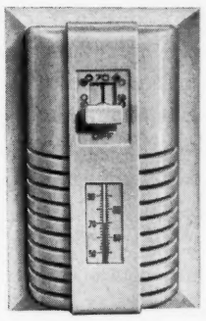

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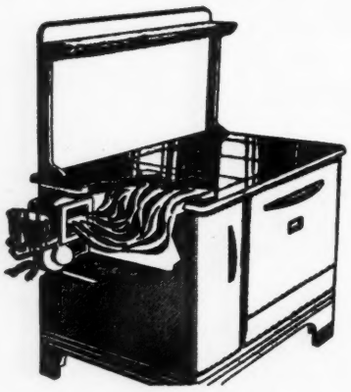

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DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE			
	January		*Percent*		*(Sept. 1 to Jan. 31)*			*Percent*
Normal	*1948*	*1949*	*Change**		*Normal*	*1948*	*1949*	*Change**
1267	1537	1119	— 11.7	Albany	3688	4181	3167	— 14.2
662	846	414	— 37.5	Atlanta	1837	1960	1622	— 11.8
922	1104	702	— 23.9	Baltimore	2569	2699	2109	— 18.0
1101	1294	940	— 14.7	Boston	3188	3383	2710	— 15.0
1220	1443	1045	— 14.4	Buffalo	3604	3745	3164	— 12.3
1219	1457	1080	— 11.4	Chicago	3454	3679	3148	— 8.9
1009	1210	756	— 25.1	Cincinnati	2901	2879	2333	— 19.6
1141	1318	934	— 18.2	Cleveland	3315	3300	2855	— 13.9
596	810	780	+ 30.8	Dallas	1540	1743	1612	+ 4.6
1026	1084	1409	+ 37.3	Denver	3298	2996	3722	+ 12.8
1326	1414	1423	+ 7.3	Des Moines	3750	3696	3671	— 2.2
1228	1408	1035	— 15.8	Detroit	3597	3688	3183	— 11.6
1249	1395	1075	— 14.0	Grand Rapids	3705	3650	3256	— 12.2
1146	1396	963	— 16.0	Hartford	3363	3705	3033	— 9.9
1337	1235	1998	+ 49.4	Helena	4411	4315	5457	+ 23.7
356	574	420	+ 17.9	Houston	876	1053	809	— 7.7
1104	1305	958	— 13.3	Indianapolis	3157	3308	2826	— 10.5
1083	1235	1214	+ 12.0	Kansas City	2960	2960	2935	— 0.9
276	219	562	+103.6	Los Angeles	659	626	1072	+ 62.6
931	1181	726	— 22.1	Louisville	2608	2750	2205	— 15.5
1329	1499	1225	— 7.9	Milwaukee	3844	3981	3522	— 8.4
1597	1686	1579	— 1.2	Minneapolis	4602	4674	4366	— 5.2
319	591	183	— 42.7	New Orleans	794	1249	575	— 27.6
1025	1211	807	— 21.3	New York	2884	3015	2312	— 19.9
1287	1393	1483	+ 15.2	Omaha	3597	3654	3774	+ 4.9
962	1169	760	— 21.0	Philadelphia	2661	2857	2225	— 16.4
1043	1343	771	— 26.1	Pittsburgh	3071	3358	2550	— 17.0
1296	1416	1188	— 8.4	Portland, Me.	3898	2618	3362	— 13.8
775	787	1066	+ 3.8	Portland, Ore.	2451	2249	2882	+ 17.6
1103	1260	889	— 19.5	Providence	3260	3302	2650	— 18.8
999	1187	966	— 3.4	St. Louis	2728	2920	2539	— 7.0
1084	1084	1528	+ 40.9	Salt Lake City	3308	3387	3872	+ 17.0
464	431	632	+ 36.2	San Francisco	1394	1404	1734	+ 24.3
1573	1716	1447	— 8.1	Sault Ste. Marie	4806	4803	4390	— 8.7
765	781	975	+ 27.4	Seattle	2577	2530	2955	+ 14.6
1185	1428	999	— 15.7	Toledo	3463	3745	3122	— 9.9
929	1110	674	— 27.5	Washington	2654	2697	2131	— 19.8

*Compared with normal.